EMC Testing & Compliance LLP
461, Udyog Vihar, Phase V
Gurgaon – 122016

Phone 0124 – 4373925
Email info@emclab.co.in

## SUMMARY OF TEST REPORT

Report No.: **EMC/T/01/19/022;** Dated: **06/03/2019**
(Number of pages in test report: page no. **1 to 97**)

**TEST FORMAT AS PER IS 13252 (Part 1): 2010 + A1: 2013 + A2: 2015 /IEC 60950-1: 2005 + A1: 2009 + A2: 2013**

1. Name of Manufacturer : **Vivotek Inc.(Chung-Ho Plant)**
   5F., 5F.-1, 5F.-2, NO.168, LIANCHENG RD., ZHONGHE DIST., NEW TAIPEI CITY 235, TAIWAN (R.O.C.)
2. Product: **Network Camera (CCTV camera)**
3. Model(s) : **IT9389-H**
4. Model differences provided (if applicable) : ~~Yes~~ / No
5. Model differences verified as per **MEITY Guidelines** for series formulation : No
6. Test Results : Refer below

**PART A : GENERAL**

| SL. NO. | TEST REQUIREMENT | CLAUSE | VERDICT |
|---|---|---|---|
| 1. | Components | 1.5 | P |
| 2. | Power Interface | 1.6 | P |
| 3. | Markings and Instructions | 1.7 | P |

**PART B : PROTECTION FROM HAZARDS**

| SL. NO. | TEST REQUIREMENT | CLAUSE | VERDICT |
|---|---|---|---|
| 1. | Protection from electric shock and energy hazards | 2.1 | P |
| 2. | SELV circuits | 2.2 | P |
| 3. | TNV circuits | 2.3 | N/A |
| 4. | Limited current circuits | 2.4 | N/A |
| 5. | Limited power sources | 2.5 | N/A |
| 6. | Provisions for earthing and bonding | 2.6 | N/A |
| 7. | Over current for earth fault protection in primary circuits | 2.7 | N/A |
| 8. | Safety interlocks | 2.8 | N/A |
| 9. | Electrical insulation | 2.9 | P |
| 10. | Clearances, creepage distances and distances through insulation | 2.10 | P |

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## PART C : WIRING, CONNECTIONS AND PHYSICAL REQUIREMENTS

| SL. NO. | TEST REQUIREMENT | CLAUSE | VERDICT |
|---|---|---|---|
| 1 | Wiring, connections and supply | 3 | P |
| 2 | Connection to a mains supply | 3.2 | N/A |
| 3 | Wiring terminals for connection of external conductors | 3.3 | N/A |
| 4 | Disconnection from the mains supply | 3.4 | N/A |
| 5 | Interconnection of equipment | 3.5 | P |
| 6. | Physical requirements | 4 | P |
| 7 | Mechanical strength | 4.2 | P |
| 8 | Design and construction | 4.3 | P |
| 9 | Protection against hazardous moving parts | 4.4 | N/A |
| 10 | Thermal requirements | 4.5 | P |
| 11 | Openings in enclosures | 4.6 | N/A |
| 12 | Resistance to fire | 4.7 | P |

## PART D : ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS

| SL. NO. | TEST REQUIREMENT | CLAUSE | VERDICT |
|---|---|---|---|
| 1 | Electrical requirements and simulated abnormal conditions | 5 | P |
| 2 | Electric strength | 5.2 | N/A |
| 3 | Abnormal operating and fault conditions | 5.3 | P |

## PART E: CONNECTION TO TELECOM AND CABLED DISTRIBUTION SYSTEM

| SL. NO. | TEST REQUIREMENT | CLAUSE | VERDICT |
|---|---|---|---|
| 1 | Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment | 6.1 | N/A |
| 2 | Protection of equipment users from over voltages on telecommunication networks | 6.2 | N/A |
| 3 | Protection of the telecommunication wiring system from overheating | 6.3 | N/A |
| 4 | Connection to cable distribution systems - General | 7.1 | N/A |
| 5 | Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment | 7.2 | N/A |
| 6 | Protection of equipment users from over voltages on the cable distribution system | 7.3 | N/A |
| 7 | Insulation between primary circuits and cable distribution systems | 7.4 | N/A |

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**GENERAL INFORMATION:**

The conformity certificates of critical components are verified to ensure complete testing of apparatus under test and details regarding harmonized IEC standards (where IEC standards are not available) are also provided in the list of critical component.

**CONCLUSION:**

1. Sample meets all relevant requirements of IS 13252 (Part 1): 2010 + A1: 2013 + A2 : 2015/ IEC 60950-1: 2005 + A1: 2009 + A2: 2013.
2. ~~Sample fails to meet the following test requirements:~~

*I, hereby, undertake that the verdict stated in the test reports for all the tests matches with the test results. The sample meets all relevant requirements of IS 13252 (Part 1):2010* + A1: 2013 + A2: 2015/IEC 60950-1: 2005 + A1: 2009 + A2: 2013 */ ~~does not meet the requirements stated above at 2~~) of conclusion. If any deviation is found, suitable punitive action may be taken by BIS.*

Testing And Compliance EMC

**Date:** 06/03/2019

(Signature of Authorized person with Stamp)
Rammohan Singh
(Technical Manager)

ULR No.:TC634619000000077F



| | | | |
|---|---|---|---|
| *Manufacturer:* | **Vivotek Inc.(Chung-Ho Plant)**<br>5F., 5F.-1, 5F.-2, NO.168, LIANCHENG RD.,ZHONGHE DIST., NEW TAIPEI CITY 235, TAIWAN (R.O.C.) | | |
| *Test item:* | **Network Camera (CCTV camera)** | | |
| *Identification:* | **IT9389-H** | *Serial No.:* | -- |
| *Receipt No.:* | **EMC/T/01/19/022** | *Date of receipt:* | 21/01/2019 |
| *Testing laboratory and its address:* | **EMC Testing and Compliance LLP**<br>461, Phase-V, Udyog Vihar, Gurgaon - 122016 | | |
| *Test specification:* | **IS 13252 (Part 1): 2010 + A1: 2013 + A2 : 2015 / IEC 60950-1: 2005 + A1: 2009 + A2 : 2013** | | |
| *Test Result:* | *The test item passed / ~~failed~~ the test specification(s).* | | |

*Other Aspects:*

- *This test report consists of 97 pages including one attachment.*
- ***Network camera(CCTV camera)****of model no:* ***IT9389-H*** *has been tested as per IS 13252 (Part 1): 2010 + A1: 2013+A2: 2015 / IEC 60950-1: 2005 + A1: 2009+A2:2013and complies with all the applicable parameter.*

*This test report relates to the test sample submitted and list of documents attached.*

| Tested by: | Approved by / Authorized Signatory: | Issued by: |
|---|---|---|
| Priyanka Bhardwaj<br>(Test Engineer) | Rammohan Singh<br>(Technical Manager) | Sanjay Kumar Lenka<br>(Customer Support Executive) |
| (Name / Designation) | (Name / Designation) | (Name / Designation) |
| Date: 06/03/2019 | Date: 06/03/2019 | Date: 06/03/2019 |

**TEST REPORT**

**IS 13252 (Part 1): 2010 + A1: 2013+ A2: 2015 / IEC 60950-1: 2005 + A1: 2009 + A2: 2013**
**Information technology equipment – Safety –**
**Part 1: General requirements**
**"CCTV Cameras/~~CCTV Recorders~~"**

| | |
|---|---|
| **Report Reference No.** ..... : | **EMC/T/01/19/022** |
| Date of issue ..... : | 06/03/2019 |
| Total number of pages ..... | 97 (Including one attachment) |
| **Testing Laboratory** ..... : | **EMC Testing and Compliance LLP** |
| Address ..... : | 461, Phase-V, Udyog Vihar, Gurgaon - 122016 |
| **Manufacturer's name** ..... : | **Vivotek Inc.(Chung-Ho Plant)** |
| Address ..... : | 5F., 5F.-1, 5F.-2, NO.168, LIANCHENG RD., ZHONGHE DIST., NEW TAIPEI CITY 235, TAIWAN (R.O.C.) |
| **Test specification:** | Refer below |
| Standard ..... : | **IS 13252 (Part 1): 2010 + A1: 2013+ A2:2015 / IEC 60950-1: 2005 + A1: 2009 +A2:2013** |
| Test procedure ..... : | Compliance Report |
| Non-standard test method ..... : | N/A |
| **Test Report Form No.** ..... : | BIS_ CCTVC/CCTVR_IS13252_V1.0 |
| Test Report Form(s) Originator ..... : | Bureau of Indian Standards |
| Master TRF ..... : | 23/11/2017 |
| **Test item description** ..... : | **Network Camera(CCTV camera)** |
| Trade Mark ..... : | VIVOTEK |
| Model/Type reference ..... : | IT9389-H |
| Ratings ..... : | PoE 37-57V ⎓, 0.17-0.11A |
| Other Documents submitted ..... : | Please refer to Table – List of Attachments at Page No.08 |

| Tested by: | Approved by / Authorized Signatory: | Issued by: |
|---|---|---|
| Priyanka Bhardwaj (Test Engineer) | Rammohan Singh (Technical Manager) | Sanjay Kumar Lenka (Customer Support Executive) |
| (Name / Designation) | (Name / Designation) | (Name / Designation) |
| Date: 06/03/2019 | Date: 06/03/2019 | Date: 06/03/2019 |

| Test Code | Description | Measurement/ testing | Total No. of tests | Total no. of applicable tests/ Req. | No. of tests/ Req. passed | Page No. |
|---|---|---|---|---|---|---|
| EL 2100 | General Requirements | Components (Cl.1.5) | 18 | 04 | 04 | 11-12 |
| EL 2101 | General Requirements | Power interface (Cl.1.6) | 05 | 02 | 02 | 13 |
| EL 2102 | Marking Requirements | Marking & instructions (Cl.1.7) | 39 | 18 | 18 | 14-15 |
| EL 2103 | Electrical safety | Protection from electric shock and energy hazards (Cl.2.1) | 14 | 04 | 04 | 16-17 |
| EL 2104 | Electrical safety | SELV Circuits (Cl.2.2) | 04 | 04 | 04 | 18 |
| EL 2105 | Electrical safety | TNV Circuits (Cl.2.3) | 12 | 00 | 00 | 19 |
| EL 2106 | Electrical safety | Limited current circuits (Cl.2.4) | 04 | 00 | 00 | 20 |
| EL 2107 | Electrical safety | Limited Power sources (Cl.2.5) | 07 | 00 | 00 | 21 |
| EL 2108 | Electrical safety | Provisions for earthing and bonding (Cl.2.6) | 19 | 00 | 00 | 22-23 |
| EL 2109 | Electrical safety | Overcurrent and earth fault protection in primary circuits (Cl.2.7) | 07 | 00 | 00 | 24 |
| EL 2110 | Electrical safety | Safety Interlocks (Cl.2.8) | 13 | 00 | 00 | 25 |
| EL 2111 | Electrical safety | Electrical Insulation (Cl.2.9) | 05 | 03 | 03 | 26 |
| EL 2112 | Electrical safety | Clearances, Creepage distances and distances through insulation (Cl.2.10) | 63 | 03 | 03 | 27-29 |
| EL 2113 | Wiring | Wiring, connections and supply (Cl.3) | 11 | 06 | 06 | 30 |
| EL 2114 | Wiring | Connection to a main supply (Cl.3.2) | 13 | 00 | 00 | 31-32 |
| EL 2115 | Wiring | Wiring terminals for connection of external conductors (Cl.3.3) | 09 | 00 | 00 | 33 |
| EL 2116 | Wiring | Disconnection for the main supply (Cl.3.4) | 12 | 00 | 00 | 34 |
| EL 2117 | Wiring | Interconnection of equipment (Cl.3.5) | 05 | 03 | 03 | 35 |
| EL 2118 | Mechanical properties | Stability (Cl.4.1) | 05 | 01 | 01 | 36 |
| EL 2119 | Mechanical properties | Mechanical strength (Cl.4.2) | 13 | 05 | 05 | 37 |
| EL 2120 | Mechanical properties | Design and construction (Cl.4.3) | 25 | 04 | 04 | 38-39 |

| | | | | | | |
|---|---|---|---|---|---|---|
| EL 2121 | Mechanical properties | Protection against hazardous moving parts (Cl.4.4) | 14 | 00 | 00 | 40 |
| EL 2122 | Thermal Properties | Thermal requirements (Cl.4.5) | 06 | 05 | 05 | 41 |
| EL 2123 | Mechanical properties | Openings in Enclosures (Cl.4.6) | 18 | 00 | 00 | 42-43 |
| EL 2124 | Fire Safety | Resistance to fire (Cl.4.7) | 25 | 10 | 10 | 44-47 |
| EL 2125 | Insulating properties | Electrical requirements and simulated abnormal conditions (Cl.5),5.1 | 20 | 01 | 01 | 48-49 |
| EL 2126 | Insulating properties | Electric Strength (Cl.5.2) | 03 | 00 | 00 | 50 |
| EL 2127 | Insulating properties | Abnormal operating and fault conditions (Cl.5.3) | 11 | 05 | 05 | 51 |
| EL 2128 | Communicating connection | Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment (Cl.6.1) | 04 | 00 | 00 | 52-53 |
| EL 2129 | Communicating connection | Protection of equipment users from over-voltages on telecommunication networks (Cl.6.2) | 06 | 00 | 00 | 54 |
| EL 2130 | Communicating connection | Protection of the telecommunication wiring system from overheating (Cl.6.3) | 05 | 00 | 00 | 55-56 |
| EL 2131 | Connection to cable distribution systems | Connection to cable distribution systems (Cl.7) | 08 | 00 | 00 | 57 |
| EL 2132 | Fire safety | Tests for resistance to heat and fire (Annex A) | 20 | 02 | 02 | 58-59 |
| EL 2133 | Insulating properties | Motor tests under abnormal conditions (Annex B) | 19 | 00 | 00 | 60-61 |
| EL 2134 | Electrical Safety | Transformers (Annex C) | 03 | 00 | 00 | 62 |
| EL 2135 | Insulating properties | Measuring Instruments For Touch-Current Tests (Annex D) | 03 | 00 | 00 | 63 |
| EL 2136 | Thermal Properties | Temperature Rise Of A Winding(Annex E) | 01 | 00 | 00 | 64 |
| EL 2137 | Electrical safety | Measurement Of Clearances And Creepage Distances(Annex F) | 01 | 00 | 00 | 65 |

| | | | | | | |
|---|---|---|---|---|---|---|
| EL 2138 | Electrical safety | Alternative Method For Determining Minimum Clearances(Annex G) | 17 | 00 | 00 | 66-67 |
| EL 2139 | Radiation Safety | Ionizing Radiation (Annex H) | 01 | 00 | 00 | 68 |
| EL 2140 | Electrical Safety | Table of electrochemical potentials (Annex J) | 01 | 00 | 00 | 69 |
| EL 2141 | General Requirements | Thermal controls (Annex K) | 07 | 00 | 00 | 70 |
| EL 2142 | General Requirements | Normal load conditions for some types of electrical business equipment (Annex L) | 08 | 02 | 02 | 71 |
| EL 2143 | Electrical Safety | Criteria for telephone ringing signals (Annex M) | 13 | 00 | 00 | 72 |
| EL 2144 | Electrical safety | Impulse Test Generators(Annex N) | 03 | 00 | 00 | 73 |
| EL 2145 | General Requirements | Normative References(Annex P) | 01 | 01 | 01 | 74 |
| EL 2146 | General Requirements | Voltage dependent resistors (VDRs) (Annex Q) | 03 | 00 | 00 | 75 |
| EL 2147 | General Requirements | Examples Of Requirements For Quality Control Programmes(Annex R) | 03 | 00 | 00 | 76 |
| EL 2148 | General Requirements | Procedure For Impulse Testing (Annex S) | 04 | 00 | 00 | 77 |
| EL 2149 | Protection against Ingress of water | Guidance On Protection Against Ingress Of Water (Annex T) | 01 | 01 | 01 | 78 |
| EL 2150 | Wiring | Insulated Winding Wires For Use Without Interleaved Insulation (Annex U) | 17 | 00 | 00 | 79 |
| EL 2151 | Electrical Safety | Ac Power Distribution Systems(Annex V) | 05 | 00 | 00 | 80 |
| EL 2152 | Electrical Safety | Summation Of Touch Currents (Annex W) | 08 | 00 | 00 | 81 |
| EL 2153 | Electrical Safety | Maximum Heating Effect In Transformer Tests(Annex X) | 03 | 00 | 00 | 82 |
| EL 2154 | Radiation safety | Ultraviolet light conditioning test (Annex Y) | 05 | 00 | 00 | 83 |
| EL 2155 | Electrical Safety | Overvoltage Categories (Annex Z) | 01 | 00 | 00 | 84 |

| | | | | | | |
|---|---|---|---|---|---|---|
| EL 2156 | Mechanical properties | Mandrel Test (Annex AA) | 01 | 00 | 00 | 85 |
| EL 2157 | Electrical Safety | Changes In The Second Edition (Annex BB) | -- | -- | -- | -- |
| EL 2158 | Electrical Safety | Evaluation of Integrated Circuit (IC) Current Limiters (Annex CC) | 06 | 00 | 00 | 86 |
| EL 2159 | Mechanical properties | Requirements for The Mounting Means of Rack-Mounted Equipment (Annex DD) | 04 | 00 | 00 | 87 |
| EL 2160 | Electrical Safety | Household And Home/ Office Document/ Media Shredders (Annex EE) | 06 | 00 | 00 | 88 |

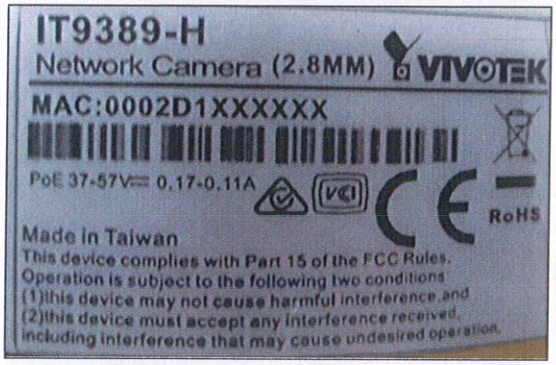
**Certificate:** It is certified that the above tests were performed and found to be passing/~~failing~~ in the requirement tested.

.....

(Approving Authority)

Copy of marking plate:

Marking Label of Network Camera




Trademark

| Table – List of Attachments | | |
|---|---|---|
| **Attachment No.** | **Attachment Description** | **No. of pages in Attachment** |
| **Attachment – 1** | Photo documents | 2 Pages (Page no. 96-97) |

**General remarks:**

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

| | |
|---|---|
| **Possible test case verdicts:** | Refer below |
| - test case does not apply to the test object ..... : | N/A |
| - test object does meet the requirement ..... : | P (Pass) |
| - test object does not meet the requirement ..... : | F (Fail) |
| **Testing** .....: | Refer below |
| Date of receipt of test item ..... : | 21/01/2019 |
| Date(s) of performance of tests ..... : | 05/02/2019-02/03/2019 |
| **Laboratory conditions** .....: | Refer below |
| Ambient Temperature ..... : | (25 ± 10)°C |
| Ambient Humidity ..... : | (60 ± 15)%RH |

| | |
|---|---|
| **Test item particulars** ..... : | **Network Camera (CCTV Camera)** |
| Equipment mobility ..... : | ☐ ~~movable~~ ☐ ~~hand-held~~ ☐ ~~transportable~~<br>☐ ~~stationary~~ ☒ for building-in ☐ ~~direct plug-in~~ |
| Connection to the mains ..... : | ☐ ~~pluggable equipment~~ ☐ ~~type A~~ ☐ ~~type B~~<br>☐ ~~permanent connection~~<br>☐ ~~detachable power supply cord~~<br>☐ ~~non-detachable power supply cord~~<br>☒ not directly connected to the mains |
| Operating condition ..... : | ☒ continuous<br>☐ ~~rated operating / resting time:~~ |
| Access location ..... : | ☒ operator accessible<br>☐ ~~restricted access location~~ |
| Over voltage category (OVC) ..... : | ☐ ~~OVC I~~ ☐ ~~OVC II~~ ☐ ~~OVC III~~ ☐ ~~OVC IV~~<br>☒ other: SELV |
| Mains supply tolerance (%) or absolute mains supply values ..... : | N/A |
| Class of equipment ..... : | ☐ ~~Class I~~ ☐ ~~Class II~~ ☒ Class III<br>☐ ~~Not classified~~ |
| Considered current rating of protective device as a part of the building installation (A) ..... : | N/A |
| Pollution degree (PD) ..... : | ☐ ~~PD 1~~ ☒ PD 2 ☐ ~~PD 3~~ |
| IP protection class ..... : | IP66 |
| Altitude during operation (m) ..... : | Up to 2000 |
| Altitude of test laboratory (m) ..... : | <1000 |
| Mass of equipment (kg) ..... : | 0.33kg |

**Abbreviations that may be used throughout this test report:**

| | | | |
|---|---|---|---|
| PE/PB ..... : | protective earth/protective bonding | Pri ..... : | primary |
| CB ..... : | circuit breaker | sec ..... : | secondary |
| (SW)PS ..... : | (switching) power supply | gnd ..... : | ground |
| HV ..... : | high voltage | I/O ..... : | input/output |
| PCB ..... : | printed circuit (wiring) board | ii ..... : | installation instruction |
| TIW ..... : | triple insulated wire | PSU ..... : | Power Supply Unit |

B/I ..... : built-in application (compliance shall be guarantee in host equipment)

F/B/S/R : Functional/Basic/Supplementary/Reinforced Insulation

**General product information:**

**1) Description of the product:**

**Network Camera (CCTV Camera)** of model no: **IT9389-H** is powered by PoE and input rating: PoE 37-57V ⎓, 0.17-0.11A.

Max. specified ambient temperature (°C): 50°C

**2) Differences between the models**.....: N/A

**Model No. tested with-in the family series**.....: N/A

**3) Options:**

The equipment was tested without any optional accessory installed. Hence, this report does not cover parameters that are influenced by the installation of optional accessory that might affect safety in the meaning of this standard.

**Tests relating to General Requirements** **EL 2100 – V1.4**

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 1.5 | Components* | EL 2100-00 | Verification of approvals with due correlation between the components used and the approval certificates submitted<br>(See appended table 1.5.1 ) | P |
| 1.5.1 | General: | EL 2100-01 | See below | P |
| | Components shall be complying with IEC 60950-1 or relevant component standard. | | In compliance | P |
| | Components and subassemblies approved for IEC 62368-1 can be considered as complying with this standard | | No such components and subassemblies used | N/A |
| 1.5.2 | Evaluation and testing of components | EL 2100-02 | Components certified to IEC standard and their harmonized standards are used within their ratings<br>(See appended table1.5.1) | P |
| 1.5.3 | Thermal controls | EL 2100-03 | No thermal controls provided | N/A |
| 1.5.4 | Transformers | EL 2100-04 | No such transformer used | N/A |
| 1.5.5 | Interconnecting cables* | EL 2100-05 | The interconnecting cables contain only SELV | P |
| 1.5.6 | Capacitors bridging insulation * | EL 2100-06 | No such insulation bridged | N/A |
| 1.5.7 | Resistors bridging insulation | EL 2100-07 | No such insulation bridged | N/A |
| 1.5.7.1 | Resistors bridging functional, basic or supplementary insulation* | EL 2100-08 | As above | N/A |
| 1.5.7.2 | Resistors bridging double or reinforced insulation between a.c. mains and other circuits | EL 2100-09 | As above | N/A |
| 1.5.7.3 | Resistors bridging double insulation or reinforced insulation between the a.c. mains supply and circuits connected to an antenna or coaxial cable | EL 2100-10 | As above | N/A |
| 1.5.8 | Components in equipment for IT power distribution systems* | EL 2100-11 | Not for IT power distribution system | N/A |
| 1.5.9 | Surge suppressors | EL 2100-12 | No surge suppressor used | N/A |
| 1.5.9.1 | General* | EL 2100-13 | As above | N/A |
| 1.5.9.2 | Protection of VDRs* | EL 2100-14 | As above | N/A |
| 1.5.9.3 | Bridging of functional insulation by a VDR* | EL 2100-15 | As above | N/A |
| 1.5.9.4 | Bridging of basic insulation by a VDR* | EL 2100-16 | As above | N/A |
| 1.5.9.5 | Bridging of supplementary, double or reinforced insulation by a VDR* | EL 2100-17 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 10
Total No of applicable Requirement = 02
No of Requirements for which the sample passed = 02

Total number of tests to be conducted = 08
Total No of applicable Tests = 02
No. of tests for which the sample passed = 02

Certificate: It is certified that the above tests were performed and found to be passing/~~failing~~ in the requirement tested.

.....
(Approving Authority)

Tests relating to Electrical Safety

EL 2101 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 1.6 | Power interface* | EL 2101-00 | See below | P |
| 1.6.1 | AC power distribution systems* | EL 2101-01 | Equipment not directly connected to mains | N/A |
| 1.6.2 | Input current | EL 2101-02 | (Refer appended table 1.6.2) | P |
| 1.6.3 | Voltage limit of hand-held equipment* | EL 2101-03 | Not a hand-held equipment | N/A |
| 1.6.4 | Neutral conductor * | EL 2101-04 | Class III equipment | N/A |

*- Total number of Requirements to be observed / inspected = 04
Total No of applicable Requirement = 01
No of Requirements for which the sample passed = 01

Total number of tests to be conducted = 01
Total No of applicable Tests = 01
No. of tests for which the sample passed= 01

Certificate: It is certified that the above tests were performed and found to be passing/~~failing~~ in the requirement tested.

.....

(Approving Authority)

Tests relating to Marking Requirements — EL 2102 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 1.7 | Marking and instructions* | EL 2102-00 | See Below | P |
| 1.7.1 | Power rating and identification markings | | In compliance | P |
| 1.7.1.1 | Power rating marking* | EL 2102-01 | See Below | P |
| | Rated voltage(s) or voltage ranges(s) (V)*. | EL 2102-02 | PoE 37-57V ⎓ | P |
| | Multiple mains supply connections*. | EL 2102-03 | Not directly connected to the mains | N/A |
| | Symbol for nature of supply, for d.c. only*: | EL 2102-04 | "⎓" marked | P |
| | Rated frequency or rated frequency range (Hz) *: | EL 2102-05 | DC supply only | N/A |
| | Rated current (mA or A)*: | EL 2102-06 | 0.17-0.11A | P |
| 1.7.1.2 | Identification markings* | EL 2102-07 | See below | P |
| | Manufacturer's name or trade-mark or identification mark *: | EL 2102-08 | VIVOTEK | P |
| | Model identification or type reference *: | EL 2102-09 | IT9389-H | P |
| | Symbol for Class II equipment only* : | EL 2102-10 | Considered for class III equipment | N/A |
| | Other markings and symbols*: | EL 2102-11 | Other markings and symbols do not give rise to misunderstanding | P |
| 1.7.1.3 | Use of graphical symbols* | EL 2102-12 | In compliance | P |
| 1.7.2 | Safety instructions and marking* | EL 2102-13 | Adequate safety Instructions provided in the user manual | P |
| 1.7.2.1 | General | EL 2102-14 | In compliance | P |
| 1.7.2.2 | Disconnect devices* | EL 2102-15 | Not a directly connected to the mains | N/A |
| 1.7.2.3 | Overcurrent protective devices* | EL 2102-16 | Not directly conncetd to the mains and Input voltage of EUT is under SELV limit | N/A |
| 1.7.2.4 | IT power distribution systems* | EL 2102-17 | Not for IT power distribution systems | N/A |
| 1.7.2.5 | Operator access with a tool* | EL 2102-18 | No tools required | N/A |
| 1.7.2.6 | Ozone* | EL 2102-19 | Does not produce Ozone | N/A |
| 1.7.3 | Short duty cycles* | EL 2102-20 | For continous operation | N/A |
| 1.7.4 | Supply voltage adjustment* | EL 2102-21 | No supply voltage adjustment provided | N/A |
| 1.7.5 | Power outlets on the equipment* | EL 2102-22 | No power outlets used | N/A |
| 1.7.6 | Fuse identification (marking, special fusing characteristics, cross-reference)<br>Fuse(s) shall clearly and adequately marked with fuse number and rating*. | EL 2102-23 | No fuse used | N/A |
| 1.7.7 | Wiring terminals | EL 2102-24 | See below | N/A |
| 1.7.7.1 | Protective earthing and bonding terminals* | EL 2102-25 | Class III Appliance | N/A |

Tests relating to Marking Requirements — EL 2102 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 1.7.7.2 | Terminals for a.c. mains supply conductors* | EL 2102-26 | No AC mains supply | N/A |
| 1.7.7.3 | Terminals for d.c. mains supply conductors* | EL 2102-27 | No DC mains supply | N/A |
| 1.7.8 | Controls and indicators | EL 2102-28 | See below | P |
| 1.7.8.1 | Identification, location and marking *: | EL 2102-29 | In-compliance | P |
| 1.7.8.2 | Colours* | EL 2102-30 | LED light used for indication purpose only | P |
| 1.7.8.3 | Symbols according to IEC 60417*: | EL 2102-31 | No such symbol | N/A |
| 1.7.8.4 | Markings using figures* : | EL 2102-32 | No safety relevant figures used | N/A |
| 1.7.9 | Isolation of multiple power sources* | EL 2102-33 | No hazardous voltage or hazardous energy supplied to the equipment | N/A |
| 1.7.10 | Thermostats and other regulating devices* | EL 2102-34 | No thermostats and other regulating devices used | N/A |
| 1.7.11 | Durability | EL 2102-35 | Marking is durable & legible and no curling observed | P |
| 1.7.12 | Removable parts* | EL 2102-36 | Marking is not placed on removable parts | P |
| 1.7.13 | Replaceable batteries* | EL 2102-37 | No battery used | N/A |
| | Language(s) | | As above | N/A |
| 1.7.14 | Equipment for restricted access locations* | EL 2102-38 | Not intended for restricted access area | N/A |

*- Total number of Requirements to be observed / inspected = 35
Total No of applicable Requirement = 14
No of Requirements for which the sample passed = 14

Total number of tests to be conducted = 04
Total No of applicable Tests = 04
No. of tests for which the sample passed = 04

Certificate: It is certified that the above tests were performed and found to be passing/~~failing~~ in the requirement tested.

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(Approving Authority)

Tests relating to Electrical Safety — EL 2103 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 2.1 | Protection from electric shock and energy hazards* | EL 2103-00 | See below | P |
| 2.1.1 | Protection in operator access areas* | EL 2103-01 | Equipment powered by SELV only | P |
| 2.1.1.1 | Access to energized parts | EL 2103-02 | Equipment powered by SELV only | P |
| | Test by inspection : | | In compliance | P |
| | Test with test finger (Figure 2A) | | As above | N/A |
| | Test with test pin (Figure 2B): | | As above | N/A |
| | Test with test probe (Figure 2C) | | No TNV circuits | N/A |
| 2.1.1.2 | Battery compartments * | EL 2103-03 | No such construction | N/A |
| 2.1.1.3 | Access to ELV wiring | EL 2103-04 | No ELV wiring | N/A |
| | Working voltage (Vpeak or Vrms); minimum distance through insulation (mm) | | As above | N/A |
| 2.1.1.4 | Access to hazardous voltage circuit wiring | EL 2103-05 | No hazardous voltage circuit wiring in operator access area | N/A |
| 2.1.1.5 | Energy hazards : | EL 2103-06 | No energy hazard occurred in operator access area | P |
| 2.1.1.6 | Manual controls | EL 2103-07 | No manual control | N/A |
| 2.1.1.7 | Discharge of capacitors in equipment | | Class III appliance | N/A |
| | Measured voltage (V); time-constant (s): | EL 2103-08 | As above | N/A |
| 2.1.1.8 | Energy hazards – d.c. mains supply | | Appliance not operate from DC mains supply | N/A |
| | a) Capacitor connected to the d.c. mains supply: | EL 2103-09 | As above | N/A |
| | b) Internal battery connected to the d.c. mains supply: | EL 2103-10 | As above | N/A |
| 2.1.1.9 | Audio amplifiers to be tested according to IEC 60065, cl. 9.1.1.: | EL 2103-11 | No audio amplifier provided | N/A |
| 2.1.2 | Protection in service access areas | EL 2103-12 | Class III equipment | N/A |
| 2.1.3 | Protection in restricted access locations | EL 2103-13 | The appliance is not intended be used in restricted location | N/A |

*- Total number of Requirements to be observed / inspected = 03
Total No of applicable Requirement = 02
No of Requirements for which the sample passed = 02

Total number of tests to be conducted = 11
Total No of applicable Tests = 02
No. of tests for which the sample passed = 02

Certificate: It is certified that the above tests were performed and found to be passing/~~failing~~ in the requirement tested.

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(Approving Authority)

Tests relating to Electrical Safety **EL 2104 – V1.4**

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 2.2 | SELV circuits* | EL 2104-00 | Refer below | P |
| 2.2.2 | Voltages under normal conditions | EL 2104-01 | Voltage within SELV limit. | P |
| 2.2.3 | Voltages under fault conditions | EL 2104-02 | Under fault condition, voltage within SELV limit. | P |
| 2.2.4 | Connection of SELV circuits to other circuits* : | EL 2104-03 | SELV to SELV only | P |

*- Total number of Requirements to be observed / inspected = 02
Total No of applicable Requirement = 02
No of Requirements for which the sample passed = 02

Total number of tests to be conducted = 02
Total No of applicable Tests = 02
No. of tests for which the sample passed= 02

Certificate: It is certified that the above tests were performed and found to be passing/~~failing~~ in the requirement tested.

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(Approving Authority)

Tests relating to Electrical Safety — EL 2105 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 2.3 | TNV circuits* | EL 2105-00 | No TNV circuit | N/A |
| 2.3.1 | Type of TNV circuits:<br>TNV-1 / TNV-2 / TNV-3 | EL 2105-01 | As above | N/A |
| | a) Limits of TNV-1: | EL 2105-02 | As above | N/A |
| | b) Limits of TNV-2 or TNV-3: Continuous voltages, combination of AC and DC values, are such that : $\frac{U_{ac}}{71} + \frac{U_{dc}}{120} \leq 1$ | EL 2105-03 | As above | N/A |
| 2.3.2 | Separation from other circuits and from accessible parts* | EL 2105-04 | As above | N/A |
| 2.3.2.1 | General Requirements | EL 2105-05 | As above | N/A |
| 2.3.2.2 | Protection by basic insulation | EL 2105-06 | As above | N/A |
| 2.3.2.3 | Protection by earthing | EL 2105-07 | As above | N/A |
| 2.3.2.4 | Protection by other constructions : | EL 2105-08 | As above | N/A |
| 2.3.3 | Separation from hazardous voltages | EL 2105-09 | As above | N/A |
| 2.3.4 | Connection of TNV circuits to other circuits | EL 2105-10 | As above | N/A |
| 2.3.5 | Test for operating voltages generated externally | EL 2105-11 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 01
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 11
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested.
(These tests are not applicable)

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(Approving Authority)

Tested By



Issued By:

Tests relating to Electrical Safety — EL 2106 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 2.4 | Limited current circuits * | EL 2106-00 | No limited current circuit | N/A |
| 2.4.1 | General requirements * | EL 2106-01 | As above | N/A |
| 2.4.2 | Limit values | EL 2106-02 | As above | N/A |
| 2.4.3 | Connection of limited current circuits to other circuits* | EL 2106-03 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 03
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 01
Total No of applicable Tests = 00
No. of tests for which the sample passed = 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested.
(These tests are not applicable)

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(Approving Authority)

Tests relating to Electrical Safety — EL 2107 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 2.5 | Limited power sources * | EL 2107-00 | No such construction used | N/A |
| | a) Inherently limited output | EL 2107-01 | As above | N/A |
| | b) Impedance limited output | EL 2107-02 | As above | N/A |
| | c) Regulating network limited output under normal operating and single fault condition<br>Use of integrated circuit (IC) current limiters | EL 2107-03 | As above | N/A |
| | d) Overcurrent protective device limited output | EL 2107-04 | As above | N/A |
| | Max. output voltage (V),<br>Max. output current (A),<br>Max. apparent power (VA) | EL 2107-05 | As above | N/A |
| | Current rating of overcurrent protective device (A) | EL 2107-06 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 01
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 06
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested. (These tests are not applicable)

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(Approving Authority)

Tests relating to Electrical Safety — EL 2108 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 2.6 | Provisions for earthing and bonding* | EL 2108-00 | Class III Appliance | N/A |
| 2.6.1 | Protective earthing | EL 2108-01 | As above | N/A |
| 2.6.2 | Functional earthing :<br>The Functional earthing either separated from hazardous voltages by double or reinforced insulation or by protectively earthed screen or conductive part separated by at least basic insulation, or safely connected to Protective Bonding Conductor.* | EL 2108-02 | As above | N/A |
| | Use of symbol for functional earthing:* | EL 2108-03 | As above | N/A |
| 2.6.3 | Protective earthing and protective bonding conductors* | EL 2108-04 | As above | N/A |
| 2.6.3.2 | Size of protective earthing conductors | EL 2108-05 | As above | N/A |
| | Rated current (A), cross-sectional area (mm2), | | As above | N/A |
| 2.6.3.3 | Size of protective bonding conductors | EL 2108-06 | As above | N/A |
| | Protective current Rating (A), cross-sectional area (mm2) | | As above | N/A |
| 2.6.3.4 | Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min): | EL 2108-07 | As above | N/A |
| 2.6.3.5 | Colour of insulation*: | EL 2108-08 | As above | N/A |
| 2.6.4 | Terminals | | As above | N/A |
| 2.6.4.2 | Protective earthing and bonding terminals : Rated current(A), Type, Nominal thread diameter (mm) | EL 2108-09 | As above | N/A |
| 2.6.4.3 | Separation of the protective earthing conductor from protective bonding conductors* | EL 2108-10 | As above | N/A |
| 2.6.5 | Integrity of protective earthing* | | As above | N/A |
| 2.6.5.1 | Interconnection of equipment* | EL 2108-11 | As above | N/A |
| 2.6.5.2 | Components in protective earthing conductors and protective bonding conductors* | EL 2108-12 | As above | N/A |
| 2.6.5.3 | Disconnection of protective earth* | EL 2108-13 | As above | N/A |
| 2.6.5.4 | Parts that can be removed by an operator* | EL 2108-14 | As above | N/A |
| 2.6.5.5 | Parts removed during servicing* | EL 2108-15 | As above | N/A |
| 2.6.5.6 | Corrosion resistance* | EL 2108-16 | As above | N/A |
| 2.6.5.7 | Screws for protective bonding* | EL 2108-17 | As above | N/A |
| 2.6.5.8 | Reliance on telecommunication network or cable distribution system* | EL 2108-18 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 14
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 05
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested.
(These tests are not applicable)

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(Approving Authority)

Tests relating to Electrical Safety — EL 2109 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 2.7 | Overcurrent and earth fault protection in primary circuits* | EL 2109-00 | Class III Appliance | N/A |
| 2.7.1 | Basic requirements:<br>Protection in primary circuits against overcurrents, short-circuits and earth faults shall be provided, either as an integral part of the equipment or as part of building installation. | EL 2109-01 | As above | N/A |
| | If pluggable equipment Type B or permanently connected equipment relies on protective device external to the equipment for protection, the equipment installation Instructions shall so state and shall also specify the requirements for short-circuit protection or overcurrent protection or, where necessary, for both. | | As above | N/A |
| 2.7.2 | Faults not simulated in 5.3.7* need not be fitted as an integral part of the equipment | EL 2109-02 | As above | N/A |
| 2.7.3 | Short-circuit backup protection | EL 2109-03 | As above | N/A |
| 2.7.4 | Number and location of protective devices : | EL 2109-04 | As above | N/A |
| 2.7.5 | Protection by several devices* | EL 2109-05 | As above | N/A |
| 2.7.6 | Warning to service personnel* : | EL 2109-06 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 04
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 03
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested.
(These tests are not applicable)

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(Approving Authority)

Tested By



Issued By:

Tests relating to Electrical Safety — EL 2110 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 2.8 | Safety Interlocks* | EL 2110-00 | No safety interlock switch used | N/A |
| 2.8.1 | General principles* | EL 2110-01 | As above | N/A |
| 2.8.2 | Protection requirements | EL 2110-02 | As above | N/A |
| 2.8.3 | Inadvertent reactivation | EL 2110-03 | As above | N/A |
| 2.8.4 | Fail-safe operation | EL 2110-04 | As above | N/A |
| 2.8.5 | Moving parts | EL 2110-05 | As above | N/A |
| 2.8.6 | Overriding* | EL 2110-06 | As above | N/A |
| 2.8.7 | Switches, relays and their related circuits | EL 2110-07 | As above | N/A |
| 2.8.7.1 | Separation distances for contact gaps and their related circuits` | EL 2110-08 | As above | N/A |
| 2.8.7.2 | Overload test | EL 2110-09 | As above | N/A |
| 2.8.7.3 | Endurance test | EL 2110-10 | As above | N/A |
| 2.8.7.4 | Electric strength test | EL 2110-11 | As above | N/A |
| 2.8.8 | Mechanical actuators | EL 2110-12 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 03
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 10
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested. (These tests are not applicable)

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(Approving Authority)

Tests relating to Electrical Safety

EL 2111 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 2.9 | Electrical insulation* | EL 2111-00 | See below | P |
| 2.9.1 | Properties of insulating materials* | EL 2111-01 | Only functional insulation is a part of equipment and complied with Cl. No. 5.3.4 (c) | P |
| 2.9.2 | Humidity conditioning | EL 2111-02 | Class III appliance | N/A |
| | Relative Humidity : 93 ±3 %,<br>Temperature: t at 40 ± 2°C<br>Duration : 120 hours | | Class III appliance | N/A |
| 2.9.3 | Grade of insulation* | EL 2111-03 | Adequate grade of insulation used | P |
| 2.9.4 | Separation from hazardous voltages* | EL 2111-04 | No hazardous voltage | N/A |
| | Method(s) used | | As above | N/A |

*- Total number of Requirements to be observed / inspected = 04
Total No of applicable Requirement = 03
No of Requirements for which the sample passed = 03

Total number of tests to be conducted = 01
Total No of applicable Tests = 00
No. of tests for which the sample passed = 00

Certificate: It is certified that the above tests were performed and found to be passing/~~failing~~ in the requirement tested.

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(Approving Authority)

Tests relating to Electrical Safety — EL 2112 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 2.10 | Clearances, creepage distances and distances through Insulation* | EL 2112-00 | See below | P |
| 2.10.1.1 | Frequency * | EL 2112-01 | DC supply only | N/A |
| 2.10.1.2 | Pollution degrees* | EL 2112-02 | PD II | P |
| 2.10.1.3 | Reduced values for functional insulation | EL 2112-03 | In-compliance with Cl. No.5.3.4(c) | P |
| 2.10.1.4 | Intervening unconnected conductive parts | EL 2112-04 | No such parts | N/A |
| 2.10.1.5 | Insulation with varying dimensions | EL 2112-05 | No such insulation | N/A |
| 2.10.1.6 | Special separation requirements | EL 2112-06 | No such requirements | N/A |
| 2.10.1.7 | Insulation in circuits generating starting pulses | EL 2112-07 | No such circuits | N/A |
| 2.10.2 | Determination of working voltage | EL 2112-08 | Class III appliance | N/A |
| 2.10.2.2 | RMS working voltage | EL 2112-09 | As above | N/A |
| 2.10.2.3 | Peak working voltage | EL 2112-10 | As above | N/A |
| 2.10.3 | Clearances | EL 2112-11 | Class III appliance, only functional insulation used compiled with Cl.No.5.3.4 (c) | N/A |
| 2.10.3.1 | General | EL 2112-12 | As above | N/A |
| 2.10.3.2 | Mains transient voltages* | | See below | N/A |
| | a) AC mains supply * : | EL 2112-13 | Not directly connected to mains | N/A |
| | b) Earthed d.c. mains supplies*: | EL 2112-14 | No DC mains supply | N/A |
| | c) Unearthed d.c. mains supplies* : | EL 2112-15 | No DC mains supply | N/A |
| | d) Battery operation* : | EL 2112-16 | No such battery operation | N/A |
| 2.10.3.3 | Clearances in primary circuits | EL 2112-17 | Class III equipment | N/A |
| 2.10.3.4 | Clearances in secondary circuits | EL 2112-18 | As above | N/A |
| 2.10.3.5 | Clearances in circuits having starting pulses | EL 2112-19 | No such Circuits | N/A |
| 2.10.3.6 | Transients from a.c. mains supply : | EL 2112-20 | Not directly connected to mains | N/A |
| 2.10.3.7 | Transients from d.c. mains supply : | EL 2112-21 | No DC mains supply | N/A |
| 2.10.3.8 | Transients from telecommunication networks and cable distribution systems : | EL 2112-22 | No telecommunication network | N/A |
| 2.10.3.9 | Measurement of transient voltages | | Not directly connected to mains | N/A |
| | a) Transients from a mains supply | EL 2112-23 | As above | N/A |
| | For an a.c. mains supply | | As above | N/A |
| | For a d.c. mains supply | | As above | N/A |
| | b) Transients from a telecommunication network | EL 2112-24 | No telecommunication network | N/A |

| | | | | |
|---|---|---|---|---|
| 2.10.4 | Creepage distances* | EL 2112-25 | Class III appliance, only functional insulation is part of EUT and compiled with Cl.No.5.3.4 (c) | N/A |
| 2.10.4.1 | General | EL 2112-26 | As above | N/A |
| 2.10.4.2 | Material group and comparative tracking index : CTI tests* | EL 2112-27 | As above | N/A |
| 2.10.4.3 | Minimum creepage distances | EL 2112-28 | As above | N/A |
| 2.10.5 | Solid insulation | EL 2112-29 | No such insulation | N/A |
| 2.10.5.1 | General | EL 2112-30 | As above | N/A |
| 2.10.5.2 | Distances through insulation | EL 2112-31 | As above | N/A |
| 2.10.5.3 | Insulating compound as solid insulation | EL 2112-32 | As above | N/A |
| 2.10.5.4 | Semiconductor devices | EL 2112-33 | No such semiconductor devices | N/A |
| 2.10.5.5. | Cemented joints | EL 2112-34 | No cemented joints | N/A |
| 2.10.5.6 | Thin sheet material – General | EL 2112-35 | No thin sheet material used | N/A |
| 2.10.5.7 | Separable thin sheet material | EL 2112-36 | As above | N/A |
| 2.10.5.8 | Non-separable thin sheet material | EL 2112-37 | As above | N/A |
| 2.10.5.9 | Thin sheet material – standard test procedure | EL 2112-38 | As above | N/A |
| | Electric strength test as per Cl.5.2.2 | | As above | N/A |
| 2.10.5.10 | Thin sheet material – alternative test procedure | EL 2112-39 | As above | N/A |
| | Electric strength test as per Cl.5.2.2 | | As above | N/A |
| 2.10.5.11 | Insulation in wound components | EL 2112-40 | As above | N/A |
| 2.10.5.12 | Wire in wound components | | No wound components | N/A |
| | If Peak Working voltage >71 V | | As above | N/A |
| | a) Basic insulation not under stress | EL 2112-41 | As above | N/A |
| | b) Basic, supplementary, reinforced insulation | EL 2112-42 | As above | N/A |
| | c) Compliance with Annex U | EL 2112-43 | As above | N/A |
| | d) Where two winding wires in contact inside wound component; angle between 45° and 90° | EL 2112-44 | As above | N/A |
| 2.10.5.13 | Wire with solvent-based enamel in wound components | | As above | N/A |
| | a) Electric strength test (Type test as per Cl.5.2.2) | EL 2112-45 | As above | N/A |
| | b) Electric Strength test (Routine test as per Cl.5.2.2) | EL 2112-46 | As above | N/A |
| 2.10.5.14 | Additional insulation in wound components | | As above | N/A |
| | If Peak Working Voltage >71V | | As above | N/A |
| | a) Basic insulation not under stress | EL 2112-47 | As above | N/A |

| | | | | |
|---|---|---|---|---|
| | b) Supplementary, reinforced insulation | EL 2112-48 | As above | N/A |
| 2.10.6 | Construction of printed boards* | | See below | P |
| 2.10.6.1 | Uncoated printed boards | EL 2112-49 | Certified uncoated printed boards used | P |
| 2.10.6.2 | Coated printed boards | EL 2112-50 | No coated printed board used | N/A |
| 2.10.6.3 | Insulation between conductors on the same inner surface of a printed board | EL 2112-51 | No such construction | N/A |
| 2.10.6.4 | Insulation between conductors on different surfaces of a printed board* | | As above | N/A |
| | a) Minimum Thickness of insulation: 0.4mm or | EL 2112-52 | As above | N/A |
| | b) Confirm with one of the specification and pass the relevant tests as per Table 2R | EL 2112-53 | As above | N/A |
| 2.10.7 | Component external terminations | EL 2112-54 | No such construction | N/A |
| 2.10.8 | Tests on coated printed boards and coated components | | No coated printed board | N/A |
| 2.10.8.1 | Sample preparation and preliminary inspection* | EL 2112-55 | As above | N/A |
| 2.10.8.2 | Thermal conditioning | EL 2112-56 | As above | N/A |
| 2.10.8.3 | Electric strength test | EL 2112-57 | As above | N/A |
| 2.10.8.4 | Abrasion resistance test | EL 2112-58 | As above | N/A |
| 2.10.9 | Thermal cycling | EL 2112-59 | Class III equipment | N/A |
| 2.10.10 | Test for Pollution Degree 1 environment and insulating compound | EL 2112-60 | Pollution Degree II | N/A |
| 2.10.11 | Tests for semiconductor devices and cemented joints | EL 2112-61 | No such devices & cemented joints | N/A |
| 2.10.12 | Enclosed and sealed parts | EL 2112-62 | No such parts | N/A |

*- Total number of Requirements to be observed / inspected = 10
Total No of applicable Requirement = 02
No of Requirements for which the sample passed = 02

Total number of tests to be conducted = 53
Total No of applicable Tests = 02
No. of tests for which the sample passed= 02

Certificate: It is certified that the above tests were performed and found to be passing/~~failing~~ in the requirement tested.

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(Approving Authority)

Tested By



Issued By:

Tests relating to Wiring EL 2113 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 3.0 | Wiring, connections and supply* | EL 2113-00 | See below | P |
| 3.1.1 | Current rating and overcurrent protection | EL 2113-01 | Adequate cross sectional area used for internal wires and interconnecting cables | P |
| 3.1.2 | Protection against mechanical damage* | EL 2113-02 | Wire ways are smooth and free from sharp edges | P |
| 3.1.3 | Securing of internal wiring* | EL 2113-03 | In-compliance | P |
| 3.1.4 | Insulation of conductors | EL 2113-04 | The wiring is routed and fixed and not touch unearthed accessible conductive parts | P |
| 3.1.5 | Beads and ceramic insulators | EL 2113-05 | Beads and ceramic insulators not used | N/A |
| 3.1.6 | Screws for electrical contact pressure* | EL 2113-06 | Screw engagedmore than two complete threaded into metal parts | P |
| 3.1.7 | Insulating materials in electrical connections* | EL 2113-07 | No such construction used | N/A |
| 3.1.8 | Self-tapping and spaced thread screws* | EL 2113-08 | No such screws used | N/A |
| 3.1.9 | Termination of conductors :<br>10 N pull test | EL 2113-09 | No such termination | N/A |
| 3.1.10 | Sleeving on wiring* | EL 2113-10 | No sleeving used | N/A |

*- Total number of Requirements to be observed / inspected = 07
Total No of applicable Requirement = 04
No of Requirements for which the sample passed = 04

Total number of tests to be conducted = 04
Total No of applicable Tests = 02
No. of tests for which the sample passed= 02

Certificate: It is certified that the above tests were performed and found to be passing/~~failing~~ in the requirement tested.

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(Approving Authority)

Tests relating to Wiring — EL 2114 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 3.2 | Connection to a mains supply* | EL 2114-00 | EUT not connected to the mains supply | N/A |
| 3.2.1 | Means of connection | | See below | N/A |
| 3.2.1.1 | Connection to an a.c. mains supply* | EL 2114-01 | No AC mains supply | N/A |
| 3.2.1.2 | Connection to a d.c. mains supply* | EL 2114-02 | No dc mains supply | N/A |
| 3.2.2 | Multiple supply connections | EL 2114-03 | No multiple supply connections | N/A |
| 3.2.3 | Permanently connected equipment | EL 2114-04 | Not a permanently connected equipment | N/A |
| 3.2.4 | Appliance inlets:<br>Are so Located that parts at hazardous voltage are not accessible during insertion or removal of the connector, connector can be inserted without difficulty and after insertion of the connector, the equipment is not supported by the connector for any position of normal use on a flat surface<br>( appliance inlets complying with IEC 60309 or IEC 60320 considered to comply with this requirement. | EL 2114-05 | Application inlet not used | N/A |
| 3.2.5 | Power supply cords | | Power supply cords not used | N/A |
| 3.2.5.1 | AC power supply cords* | EL 2114-06 | As above | N/A |
| | Rated current (A), cross-sectional area ($mm^2$), AWG | | As above | N/A |
| 3.2.5.2 | DC power supply cords* | EL 2114-07 | As above | N/A |
| 3.2.6 | Cord anchorages and strain relief | | As above | N/A |
| | Mass of the equipment:<br>Pull Force (N): | EL 2114-08 | As above | N/A |
| | b) Longitudinal displacement: 2 mm (Max) | EL 2114-09 | As above | N/A |
| 3.2.7 | Protection against mechanical damage | EL 2114-10 | As above | N/A |
| 3.2.8 | Cord guards | | As above | N/A |
| | a) Diameter or minor dimension D (mm) :<br>Test mass (g) : | EL 2114-11 | As above | N/A |
| | b) Radius of curvature of cord : 1.5 D (Min) | EL 2114-12 | As above | N/A |
| 3.2.9 | Supply wiring space | EL 2114-13 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 05
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 08
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested.
(These tests are not applicable)

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(Approving Authority)

Tests relating to Wiring EL 2115 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 3.3 | Wiring terminals for connection of external conductors* | EL 2115-00 | No such construction used | N/A |
| 3.3.1 | Wiring terminals* | EL 2115-01 | As above | N/A |
| 3.3.2 | Connection of non-detachable power supply cords | EL 2115-02 | As above | N/A |
| 3.3.3 | Screw terminals* | EL 2115-03 | As above | N/A |
| 3.3.4 | Conductor sizes to be connected | EL 2115-04 | As above | N/A |
| | Rated current (A), cord/cable type, cross-sectional area (mm2) | | As above | N/A |
| 3.3.5 | Wiring terminal sizes | EL 2115-05 | As above | N/A |
| | Rated current (A), type, nominal thread diameter (mm) | | As above | N/A |
| 3.3.6 | Wiring terminal design | EL 2115-06 | As above | N/A |
| 3.3.7 | Grouping of wiring terminals* | EL 2115-07 | As above | N/A |
| 3.3.8 | Stranded wire | EL 2115-08 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 04
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 05
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested.
(These tests are not applicable)

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(Approving Authority)

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Issued By:

Tests relating to Wiring — EL 2116 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 3.4 | Disconnection from the mains supply* | EL 2116-00 | Not directly connected to mains | N/A |
| 3.4.1 | General Requirement<br>A disconnect device or devices shall be provided to disconnect the equipment from the mains supply for servicing. | EL 2116-01 | As above | N/A |
| 3.4.2 | Disconnect devices* | EL 2116-02 | As above | N/A |
| 3.4.3 | Permanently connected equipment* | EL 2116-03 | As above | N/A |
| 3.4.4 | Parts which remain energized* | EL 2116-04 | As above | N/A |
| 3.4.5 | Switches in flexible cords* | EL 2116-05 | As above | N/A |
| 3.4.6 | Number of poles - single-phase and d.c. equipment* | EL 2116-06 | As above | N/A |
| 3.4.7 | Number of poles - three-phase equipment* | EL 2116-07 | As above | N/A |
| 3.4.8 | Switches as disconnect devices* | EL 2116-08 | As above | N/A |
| 3.4.9 | Plugs as disconnect devices* | EL 2116-09 | As above | N/A |
| 3.4.10 | Interconnected equipment* | EL 2116-10 | As above | N/A |
| 3.4.11 | Multiple power sources* | EL 2116-11 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 11
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 01
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested.
(These tests are not applicable)

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(Approving Authority)

Tests relating to Wiring

EL 2117 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 3.5 | Interconnection of equipment* | EL 2117-00 | See below | P |
| 3.5.1 | General requirements* | EL 2117-01 | In-compliance | P |
| 3.5.2 | Types of interconnection circuits* | EL 2117-02 | SELV to SELV circuit | P |
| 3.5.3 | ELV circuits as interconnection circuits * | EL 2117-03 | No ELV circuits | N/A |
| 3.5.4 | Data ports for additional equipment | EL 2117-04 | No such data port | N/A |

*- Total number of Requirements to be observed / inspected = 04
Total No of applicable Requirement = 03
No of Requirements for which the sample passed = 03

Total number of tests to be conducted = 01
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be passing/~~failing~~ in the requirement tested.

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(Approving Authority)

Tests relating to Mechanical Properties — EL 2118 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 4 | PHYSICAL REQUIREMENTS* | EL 2118-00 | In compliance | P |
| 4.1 | Stability | EL 2118-01 | See below | N/A |
| | a) A unit having a mass of 7 kg or more shall not fall over when tilted to an angle of 10° from its normal upright position. Alternatively, the unit is placed in its intended position of use on a plane, inclined at an angle of 10° to the horizontal, and then rotated slowly through an angle of 360° about its normal vertical axis. | EL 2118-02 | Mass less than 7kg | N/A |
| | b) A floor-standing unit having a mass of 25 kg or more shall not fall over when a force equal to 20 % of the weight of the unit, but not more than 250 N, is applied in any direction except upwards, at a height not exceeding 2 m from the floor. | EL 2118-03 | Not a floor standing equipment | N/A |
| | c) A floor-standing unit shall not fall over when a constant downward force of 800 N is<br>applied at the point of maximum moment to any horizontal surface of at least 125 mm by at least 200 mm, at a height up to 1 m from the floor. | EL 2118-04 | Not a floor standing equipment | N/A |

*- Total number of Requirements to be observed / inspected = 01
Total No of applicable Requirement = 01
No of Requirements for which the sample passed = 01

Total number of tests to be conducted = 04
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be passing/~~failing~~ in the requirement tested.

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(Approving Authority)

Tests relating to Mechanical Properties

EL 2119 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 4.2 | Mechanical Strength | EL 2119-00 | In compliance | P |
| 4.2.1 | General | EL 2119-01 | See below | P |
| 4.2.2 | Steady force test, 10 N | EL 2119-02 | No such parts used | N/A |
| 4.2.3 | Steady force test, 30 N | EL 2119-03 | No such parts used | N/A |
| 4.2.4 | Steady force test, 250 N | EL 2119-04 | Force applied on enclosure.<br>No safety relevant damage occurred. | P |
| 4.2.5 | Impact test | EL 2119-05 | Building in equipment | N/A |
| | a) Fall test as per Fig. 4A | EL 2119-06 | As above | N/A |
| | b) Swing test as per Fig. 4A | EL 2119-07 | As above | N/A |
| 4.2.6 | Drop test;<br>height (mm) : | EL 2119-08 | Building in equipment | N/A |
| 4.2.7 | Stress relief test | EL 2119-09 | Tested at 70°C for 7 hrs;<br>No shrinkage or distortion observed | P |
| 4.2.8 | Cathode Ray Tubes | EL 2119-10 | Cathode Ray Tubes are not used | N/A |
| 4.2.9 | High Pressure Lamps* | EL 2119-11 | No such lamps used in EUT | N/A |
| 4.2.10 | Wall or ceiling mounted equipment; force(N) | EL 2119-12 | In compliance | P |

*- Total number of Requirements to be observed / inspected = 01
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 12
Total No of applicable Tests = 05
No. of tests for which the sample passed=05

Certificate: It is certified that the above tests were performed and found to be passing~~/failing~~ in the requirement tested.

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(Approving Authority)

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Tests relating to Mechanical Properties — EL 2120 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 4.3 | Design and Construction* | EL 2120-00 | See below | P |
| 4.3.1 | Edges and corners* | EL 2120-01 | Edges and corners are smooth and rounded and accesible to operators | P |
| 4.3.2 | Handles and manual controls; force (N): | EL 2120-02 | No Handles and manual controls used | N/A |
| 4.3.3 | Adjustable controls | EL 2120-03 | Adjustable controls not used | N/A |
| 4.3.4 | Securing of parts | EL 2120-04 | In compliance | P |
| 4.3.5 | Connections by Plugs and Sockets* | EL 2120-05 | No plugs and sockets used | N/A |
| 4.3.6 | Direct plug-in equipment | EL 2120-06 | Not a direct plug-in equipment | N/A |
| | Torque | EL 2120-07 | As above | N/A |
| | Compliance with the relevant mains plug standard | EL 2120-08 | As above | N/A |
| 4.3.7 | Heating elements in earthed equipment* | EL 2120-09 | No heating element used | N/A |
| 4.3.8 | Batteries<br>Portable secondary sealed cells and batteries (other than button) containing alkaline or other non-acid electrolyte shall comply with IEC 62133 | | No such battery used | N/A |
| | a) Overcharging of a rechargeable battery | EL 2120-10 | As above | N/A |
| | b) Unintentional charging of a non-rechargeable battery | EL 2120-11 | As above | N/A |
| | c) Reverse charging of a rechargeable battery | EL 2120-12 | As above | N/A |
| | d) Excessive discharging rate for any battery | EL 2120-13 | As above | N/A |
| | e) Electric strength as per Cl.5.3.9.2 | EL 2120-14 | As above | N/A |
| 4.3.9 | Oil & grease* | EL 2120-15 | Oil and grease not used | N/A |
| 4.3.10 | Dust, powders, liquids and gases | EL 2120-16 | Equipment neither used nor produces them | N/A |
| 4.3.11 | Containers for liquids or gases | EL 2120-17 | Equipment does not contain liquids or gases | N/A |
| 4.3.12 | Flammable liquids | EL 2120-18 | No flammable liquids used in the equipments | N/A |
| 4.3.13 | Radiation | | See below | P |
| 4.3.13.2 | Ionizing radiation | EL 2120-19 | No Ionizing radiation | N/A |
| 4.3.13.3 | Effect of ultraviolet (UV) radiation on materials | EL 2120-20 | No ultraviolet (UV) radiation on materials | N/A |

| | | | | |
|---|---|---|---|---|
| 4.3.13.4 | Human exposure to ultraviolet (UV) radiation | EL 2120-21 | No such radiation used | N/A |
| 4.3.13.5 | Lasers (including laser diodes) and LED's: | | See below | P |
| 4.3.13.5.1 | Lasers (including laser diodes) For laser see IEC 60825-1, respective part as applicable. | EL 2120-22 | No lasers used | N/A |
| | Laser class : | | As above | N/A |
| 4.3.13.5.2 | Light emitting diodes (LED's) | EL 2120-23 | Low power LEDs are used for functional indicator | P |
| 4.3.13.6 | Other types* | EL 2120-24 | Other types of radiation not generated | N/A |

*- Total number of Requirements to be observed / inspected = 06
Total No of applicable Requirement = 02
No of Requirements for which the sample passed = 02

Total number of tests to be conducted = 19
Total No of applicable Tests = 02
No. of tests for which the sample passed= 02

Certificate: It is certified that the above tests were performed and found to be passing/~~failing~~ in the requirement tested.

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(Approving Authority)

Tests relating to Mechanical Properties EL 2121 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 4.4 | Protection against hazardous moving parts | EL 2121-00 | No hazardous moving parts | N/A |
| 4.4.1 | General | EL 2121-01 | As above | N/A |
| 4.4.2 | Protection in operator access areas | EL 2121-02 | As above | N/A |
| 4.4.3 | Protection in restricted access locations * | EL 2121-03 | As above | N/A |
| 4.4.4 | Protection in service access areas* | EL 2121-04 | As above | N/A |
| 4.4.5 | Protection against moving fan blades | EL 2121-05 | As above | N/A |
| 4.4.5.1 | General* | EL 2121-06 | As above | N/A |
| | Not considered likely to cause pain or injury. a).: | EL 2121-07 | As above | N/A |
| | Is considered likely to cause pain, not injury. b) | EL 2121-08 | As above | N/A |
| | Considered likely to cause injury. c): | EL 2121-09 | As above | N/A |
| 4.4.5.2 | Protection for users* | EL 2121-10 | As above | N/A |
| | Use of symbol or warning* | EL 2121-11 | As above | N/A |
| 4.4.5.3 | Protection for service persons* | EL 2121-12 | As above | N/A |
| | Use of symbol or warning * | EL 2121-13 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 07
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 07
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested. (These tests are not applicable)

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(Approving Authority)

Tests relating to Thermal Properties — EL 2122 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 4.5 | Thermal Requirements* | EL 2122-00 | See below | P |
| 4.5.1 | General | EL 2122-01 | In-compliance | P |
| 4.5.2 | Temperature tests | EL 2122-02 | Normal operating condition with continuous operation | P |
| 4.5.3 | Temperature limits for materials* | EL 2122-03 | Refer appended table 4.5 | P |
| 4.5.4 | Touch temperature limits* | EL 2122-04 | Refer appended table 4.5 | P |
| 4.5.5 | Resistance to abnormal heat | EL 2122-05 | No thermoplastic parts at hazardous voltage | N/A |

*- Total number of Requirements to be observed / inspected = 03
Total No of applicable Requirement = 03
No of Requirements for which the sample passed = 03

Total number of tests to be conducted = 03
Total No of applicable Tests = 02
No. of tests for which the sample passed = 02

Certificate: It is certified that the above tests were performed and found to be passing/~~failing~~ in the requirement tested.

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(Approving Authority)

Tests relating to Mechanical Properties — EL 2123 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 4.6 | Openings in enclosures* | EL 2123-00 | See below | N/A |
| 4.6.1 | Top and side openings | EL 2123-01 | No such openings. | N/A |
| | Dimensions (mm) : | | As above | N/A |
| 4.6.2 | Bottoms of fire enclosures : | EL 2123-02 | No such openings. | N/A |
| | Construction of the bottom, dimensions (mm) : | | As above | N/A |
| 4.6.3 | Doors or covers in fire enclosures* | EL 2123-03 | No such doors or covers | N/A |
| 4.6.4 | Openings in transportable equipment | EL 2123-04 | Not a transportable equipment | N/A |
| 4.6.4.1 | Constructional design measures | EL 2123-05 | As above | N/A |
| | Dimensions (mm) | | As above | N/A |
| 4.6.4.2 | Evaluation measures for larger openings | EL 2123-06 | As above | N/A |
| 4.6.4.3 | Use of metallized parts | EL 2123-07 | As above | N/A |
| 4.6.5 | Adhesives for constructional purposes: Compliance is checked by examination of the construction and of the available data. If such data is not available, compliance is checked by the following tests. | EL 2123-08 | No adhesive used | N/A |
| | a)Temperature Conditioning at :<br>100 °C ± 2 °C for one week; or<br>90 °C ± 2 °C for three weeks; or<br>82 °C ± 2 °C for eight weeks. | EL 2123-09 | As above | N/A |
| | After temperature conditioning<br>b) Leave the sample between 20°C to 30°C for 1 hour | EL 2123-10 | As above | N/A |
| | c) Place the sample at - 40°C±2°C for 4 hours | EL 2123-11 | As above | N/A |
| | d) Remove and allow the sample to come to any convenient temperature between 20 °C and 30 °C for 8 h; | EL 2123-12 | As above | N/A |
| | e) Place the sample in a cabinet at 91 % to 95 % relative humidity for 72 h; | EL 2123-13 | As above | N/A |
| | f) Remove the sample and leave it at any convenient temperature between 20 °C and 30 °C for 1 h; | EL 2123-14 | As above | N/A |
| | g) Place the sample in an oven at the temperature used for the temperature conditioning for 4 h; | EL 2123-15 | As above | N/A |

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|---|---|---|---|---|
| | h) Remove the sample and allow it to reach any convenient temperature between 20 °C; and 30 °C for 8 h. | EL 2123-16 | As above | N/A |
| | i) The sample is then immediately subjected to the tests of Cl.4.2 as applicable. | EL 2123-17 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 02
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 16
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested.
(These tests are not applicable)

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(Approving Authority)

Tests relating to Fire Safety — EL 2124 – V1.4

| Cl.. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 4.7 | Resistance to fire* | EL 2124-00 | In compliance | P |
| 4.7.1 | Reducing the risk of ignition and spread of flame | | Component and material have adequate flammability classification<br>(Refer appended table 1.5.1) | P |
| | Method 1, selection and application of components wiring and materials OR | EL 2124-01 | Method 1 used | P |
| | Method 2, application of all of simulated fault condition tests | EL 2124-02 | Method 2 not used | N/A |
| 4.7.2 | Conditions for a fire enclosure* | | See below | P |
| 4.7.2.1 | Parts requiring a fire enclosure* | EL 2124-03 | All parts inside the fire enclosure | P |
| 4.7.2.2 | Parts not requiring a fire enclosure | EL 2124-04 | Fire enclosure cover all parts | N/A |
| 4.7.3 | Materials* | EL 2124-05 | Component and material have adequate flammability classification<br>(Refer appended table 1.5.1) | P |
| 4.7.3.1 | General* | EL 2124-06 | See below | P |
| | a)Class of material used* | EL 2124-07 | Components and material have adequate flammability classes | P |
| | b) Where HB40 CLASS MATERIAL, HB75 CLASS MATERIAL or HBF CLASS FOAMED MATERIAL, is required,<br>material passing the glow-wire test at 550 °C according to IEC 60695-2-11 is acceptable as an alternative. | EL 2124-08 | Certified material used<br>(Refer appended table 1.5.1) | P |
| | c) Where it is not practical to protect components against overheating under fault conditions, the components shall be mounted on V-1 CLASS MATERIAL. Additionally, such components shall be separated from material of a class lower than V-1 CLASS MATERIAL by at least 13 mm of air, or by a solid barrier of V-1 CLASS MATERIAL. | EL 2124-09 | Certified material used<br>(Refer appended table 1.5.1) | P |
| 4.7.3.2 | Materials for fire enclosures | | Metallic enclosure | P |
| | a) For MOVABLE EQUIPMENT having a total mass not exceeding 18 kg, the material of a FIRE ENCLOSURE, in the thinnest significant wall thickness used, shall be of V-1 CLASS MATERIAL or shall pass the test of Clause A.2. | EL 2124-10 | As above | N/A |

| | | | | |
|---|---|---|---|---|
| | b) For MOVABLE EQUIPMENT having a total mass exceeding 18 kg and for all STATIONARY EQUIPMENT, the material of a FIRE ENCLOSURE, in the thinnest significant wall thickness used, shall be of 5VB CLASS MATERIAL or shall pass the test of Clause A.1. | EL 2124-11 | As above | N/A |
| | c) Materials for components that fill an opening in a FIRE ENCLOSURE, and that are intended to be mounted in this opening shall :<br>be of V-1 CLASS MATERIAL;<br>or<br>pass the tests of Clause A.2; or<br>comply with the flammability requirements of the relevant IEC component standard | EL 2124-12 | As above | N/A |
| | d) Plastic materials of a FIRE ENCLOSURE shall be located more than 13 mm through air from arcing parts such as unenclosed commutators and unenclosed switch contacts. | EL 2124-13 | As above | N/A |
| | e) Plastic materials of a FIRE ENCLOSURE located less than 13mm through air from non-arcing parts which, under any condition of normal or abnormal operation, could attain a temperature sufficient to ignite the material, shall be capable of passing the test of IEC 60695-2-20.<br>The average time to ignition of the samples shall be not less than 15sec. If the sample melts through without igniting, the time at which this occurs is not considered to be the time to ignition. | EL 2124-14 | As above | N/A |
| 4.7.3.3 | Materials for components and other parts outside fire enclosures * | | No such components outside fire enclosure | N/A |
| | a) Materials shall be of :<br>– HB75 CLASS MATERIAL if the thinnest significant thickness of this material is < 3 mm, or<br>– HB40 CLASS MATERIAL if the thinnest significant thickness of this material is ≥ 3 mm, or<br>– HBF CLASS FOAMED MATERIAL.* | EL 2124-15 | As above | N/A |

| | | | | |
|---|---|---|---|---|
| | b) Connectors shall comply with one of the following:<br>− be made of V-2 CLASS MATERIAL; or<br>− pass the tests of Clause A.2; or<br>− comply with the flammability requirements of the relevant IEC component standard; or<br>− be mounted on V-1 CLASS MATERIAL and be of a small size; or<br>− be located in a SECONDARY CIRCUIT supplied by a power source that is limited to a<br>maximum of 15 VA (see 1.4.11) under normal operating conditions and after a single fault<br>in the equipment (see 1.4.14). | EL 2124-16 | As above | N/A |
| 4.7.3.4 | Materials for components and other parts inside fire enclosures | | Certified material used<br>(Refer appended table 1.5.1) | P |
| | a) Inside FIRE ENCLOSURES, materials for components and other parts shall comply with<br>one of the following:<br>− be of V-2 CLASS MATERIAL or<br>HF-2 CLASS FOAMED MATERIAL; or<br>− pass the flammability test described in Clause A.2; or<br>− meet the flammability requirements of a relevant IEC component standard that includes such requirements. | EL 2124-17 | As above | P |
| | Requirements for voltage dependent resistors (VDR's) are in Annex Q.* | EL 2124-18 | No VDR used | N/A |
| 4.7.3.5 | Materials for air filter assemblies:<br>Air filter assemblies shall be constructed of V-2 CLASS MATERIAL, or HF-2 CLASS FOAMED<br>MATERIAL. | EL 2124-19 | No such material used for air filter assemblies | N/A |
| 4.7.3.6 | Materials used in high-voltage components | | No materials used in high-voltage components | N/A |

| | | | | |
|---|---|---|---|---|
| | a) High-voltage components operating at peak-to-peak voltages exceeding 4 kV shall either be<br>of V-2 CLASS MATERIAL, or<br>HF-2 CLASS FOAMED MATERIAL, or comply with 14.4 of IEC 60065 or<br>pass the needle flame test according to IEC 60695-11-5. | EL 2124-20 | As above | N/A |
| | b) Compliance is checked by inspection of the equipment and material data sheets and, if necessary, by<br>– the tests for V-2 CLASS MATERIAL or HF-2 CLASS FOAMED MATERIAL; or<br>– the test described in 14.4 of IEC 60065; or<br>– the needle flame test according to IEC 60695-11-5. | EL 2124-21 | As above | N/A |
| | c) In addition to above, the following details apply, referring to clauses of IEC 60695-11-5:<br>Clause 7 - Severities | EL 2124-22 | As above | N/A |
| | Clause 8 - Conditioning | EL 2124-23 | As above | N/A |
| | Clause 11 - Evaluation of test results | EL 2124-24 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 07
Total No of applicable Requirement = 05
No of Requirements for which the sample passed = 05

Total number of tests to be conducted = 18
Total No of applicable Tests = 05
No. of tests for which the sample passed= 05

Certificate: It is certified that the above tests were performed and found to be passing/~~failing~~ in the requirement tested.

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(Approving Authority)

Tests relating to Insulating Properties — EL 2125 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 5.0 | ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS* | EL 2125-00 | In compliance | P |
| 5.1 | Touch current and protective conductor current* | EL 2125-01 | Class III Appliance | N/A |
| 5.1.2 | Configuration of equipment under test (EUT)* | EL 2125-02 | As above | N/A |
| 5.1.2.1 | Single connection to an a.c. mains supply* | EL 2125-03 | As above | N/A |
| 5.1.2.2 | Redundant multiple connections to an a.c. mains supply* | EL 2125-04 | As above | N/A |
| 5.1.2.3 | Simultaneous multiple connections to an a.c. mains supply | EL 2125-05 | As above | N/A |
| 5.1.3 | Test circuit | EL 2125-06 | As above | N/A |
| 5.1.4 | Application of measuring instrument | EL 2125-07 | As above | N/A |
| 5.1.5 | Test procedure | EL 2125-08 | As above | N/A |
| 5.1.6 | Test measurements | | As above | N/A |
| | a) r.m.s value of voltage, U2 measured using the instrument as per Fig. D.1 or<br>r.m.s value of current measured using the instrument as per Fig. D.2<br>Alternatively, peak value of voltage, U2, is measured using the measuring instrument described in Clause D.1 | EL 2125-09 | As above | N/A |
| | b) Measured touch current (mA): | EL 2125-10 | As above | N/A |
| | c) Calculated value of TOUCH CURRENT (mA) = U2 / 500 | EL 2125-11 | As above | N/A |
| | d ) Measured protective conductor current(mA) | EL 2125-12 | As above | N/A |
| | e) Max. protective conductor current =5% of Input current | EL 2125-13 | As above | N/A |
| 5.1.7 | Equipment with touch current exceeding 3.5 mA | EL 2125-14 | As above | N/A |
| 5.1.7.1 | General | EL 2125-15 | As above | N/A |
| 5.1.7.2 | Simultaneous multiple connections to the supply | EL 2125-16 | As above | N/A |
| 5.1.8 | Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks | EL 2125-17 | As above | N/A |

| | | | | |
|---|---|---|---|---|
| 5.1.8.1 | Limitation of the touch current to a telecommunication network or to a cable distribution system | EL 2125-18 | As above | N/A |
| | Supply voltage (V) | | As above | N/A |
| | Measured touch current (mA) | | As above | N/A |
| | Max. allowed touch current (mA) | | As above | N/A |
| 5.1.8.2 | Summation of touch currents from telecommunication networks | EL 2125-19 | As above | N/A |
| | a) EUT with earthed telecommunication ports: | | As above | N/A |
| | b) EUT whose telecommunication ports have no reference to protective earth | | As above | N/A |

*- Total number of Requirements to be observed / inspected = 05
Total No of applicable Requirement = 01
No of Requirements for which the sample passed = 01

Total number of tests to be conducted = 15
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be passing/~~failing~~ in the requirement tested.

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(Approving Authority)

Tests relating to Insulating Properties — EL 2126 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 5.2 | Electric strength* | EL 2126-00 | Class III Appliance | N/A |
| 5.2.1 | General* | EL 2126-01 | As above | N/A |
| 5.2.2 | Test procedure | | As above | N/A |
| | a) The test voltages for electric strength for the appropriate grade of insulation [FUNCTIONAL INSULATION if required by 5.3.4 b), BASIC INSULATION, SUPPLEMENTARY INSULATION or REINFORCED INSULATION] are as specified in either:<br>– Table 5B using the PEAK WORKING VOLTAGE (U), as determined in 2.10.2; or<br>– Table 5C using the REQUIRED WITHSTAND VOLTAGE, as determined in G.4. | EL 2126-02 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 02
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 01
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested. (These tests are not applicable).

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(Approving Authority)

Tests relating to Insulating Properties — EL 2127 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 5.3 | Abnormal operating and fault conditions | EL 2127-00 | See below | P |
| 5.3.1 | Protection against overload and abnormal operation | EL 2127-01 | (Refer appended table 5.3) | P |
| 5.3.2 | Motors | EL 2127-02 | No such motor used | N/A |
| 5.3.3 | Transformers | EL 2127-03 | No such transformer used. | N/A |
| 5.3.4 | Functional insulation: | EL 2127-04 | In-compliance with Cl 5.3.4 (c) | P |
| 5.3.5 | Electromechanical components | EL 2127-05 | Electromechanical components not used | N/A |
| 5.3.6 | Audio amplifiers in ITE: | EL 2127-06 | No audio amplifier used | N/A |
| 5.3.7 | Simulation of faults | EL 2127-07 | (Refer appended table 5.3) | P |
| 5.3.8 | Unattended equipment | EL 2127-08 | Not intended for unattended use | N/A |
| 5.3.9 | Compliance criteria for abnormal operating and fault conditions* | | See below | P |
| 5.3.9.1 | During the tests | EL 2127-09 | No fire occurred, no molten metal was emitted and no deformation of enclosure | P |
| 5.3.9.2 | After the tests | EL 2127-10 | Class III appliance | N/A |

*- Total number of Requirements to be observed / inspected = 00
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 11
Total No of applicable Tests = 05
No. of tests for which the sample passed= 05

Certificate: It is certified that the above tests were performed and found to be passing/~~failing~~ in the requirement tested.

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(Approving Authority)

Tests relating to Communicating Connection — EL 2128 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 6.1 | Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment | EL 2128-00 | No telecommunication network | N/A |
| 6.1.1 | Protection from hazardous voltages | EL 2128-01 | As above | N/A |
| 6.1.2 | Separation of the telecommunication network from earth* | | As above | N/A |
| 6.1.2.1 | Requirements:<br>- Surge suppressors that bridge the insulation shall have a minimum rated operating voltage $U_{op}$ of<br>$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$<br>Where $U_{peak}$ is 360V or 180V<br>$\Delta U_{sp}$ is the maximum increase of the rated operating voltage due to variations in component production(If not specified by the manufacturer, shall be taken as 10% of the rated operating voltage of the component)<br>$\Delta U_{sa}$ is the maximum increase of the rated operating voltage due to the component ageing over the expected life of the equipment(If not specified by the manufacturer, shall be taken as 10% of the rated operating voltage of the component)<br>-Insulation is subjected to electric strength test according to 5.2.2. The a.c test voltage is 1.5kV or 1.0kV<br>- Components bridging the insulation that are left in place during electric strength testing shall not be damaged. There shall be no breakdown of insulation during electric strength testing. | EL 2128-02 | As above | N/A |
| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
| 6.1.2.2 | Exclusions | EL 2128-03 | No telecommunication network. | N/A |

*- Total number of Requirements to be observed / inspected = 00
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 04
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested.
(These tests are not applicable)

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(Approving Authority)

Tests relating to Communicating Connection — EL 2129 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 6.2 | Protection of equipment users from overvoltages on telecommunication networks* | EL 2129-00 | No telecommunication network | N/A |
| 6.2.1 | Separation requirements | EL 2129-01 | As above | N/A |
| 6.2.2 | Electric strength test procedure | EL 2129-02 | As above | N/A |
| 6.2.2.1 | Impulse test | EL 2129-03 | As above | N/A |
| 6.2.2.2 | Steady-state test | EL 2129-04 | As above | N/A |
| 6.2.2.3 | Compliance criteria | EL 2129-05 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 01
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 05
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested.
(These tests are not applicable).

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(Approving Authority)

Tests relating to Communicating Connection — EL 2130 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 6.3 | Protection of the telecommunication wiring system from overheating | EL 2130-00 | Equipment is not for connection in telecommunication wiring system | N/A |
| | a)If current limiting is due to the inherent impedance of the power source, the output current into any resistive load, including a short-circuit, is measured. The current limit shall not beexceeded after 60 s of test.<br>Max. output current (A) : | EL 2130-01 | As above | N/A |
| | b) If current limiting is provided by an overcurrent protective device having a specified time/current characteristic:<br>– the time/current characteristic shall show that a current equal to 110 % of the current limit will be interrupted within 60 min; and | EL 2130-02 | As above | N/A |
| | c) the output current into any resistive load, including a short-circuit, with the overcurrent protective device bypassed, measured after 60 s of test, shall not exceed 1 000/U,<br>where U is the output voltage measured in accordance with 1.4.5 with all load circuitsdisconnected. | EL 2130-03 | As above | N/A |
| | d) If current limiting is provided by an overcurrent protective device that does not have a<br>specified time/current characteristic:<br>– the output current into any resistive load, including a short-circuit, shall not exceed the<br>current limit after 60 s of test; and<br>– the output current into any resistive load, including a short-circuit, with the overcurrent<br>protective device bypassed, measured after 60 s of test, shall not exceed 1 000/U, where<br>U is the output voltage measured in accordance with 1.4.5 with all load circuitsdisconnected. | EL 2130-04 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 00
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 05
Total No of applicable Tests = 00
No. of tests for which the sample passed = 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested. (These tests are not applicable).

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(Approving Authority)

Tests relating to Connection to cable distribution system **EL 2131 – V1.4**

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| 7 | Connection to cable distribution systems* | EL 2131-00 | Not for connection to cable distribution system | N/A |
| 7.1 | General requirements* | EL 2131-01 | As above | N/A |
| 7.2 | Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment | EL 2131-02 | As above | N/A |
| 7.3 | Protection of equipment users from overvoltage on the cable distribution system | EL 2131-03 | As above | N/A |
| 7.4 | Insulation between primary circuits and cable distribution systems | EL 2131-04 | As above | N/A |
| 7.4.1 | General | EL 2131-05 | As above | N/A |
| 7.4.2 | Voltage surge test | EL 2131-06 | As above | N/A |
| 7.4.3 | Impulse test | EL 2131-07 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 02
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 06
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested. (These tests are not applicable).

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(Approving Authority)

Tests relating to Fire Safety — EL 2132 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| A | ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE | EL 2132-00 | In compliance | P |
| A.1 | Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2) | EL 2132-01 | Refer A.2 | N/A |
| A.1.1 | Samples: | EL 2132-02 | As above | N/A |
| | Wall thickness (mm): | | As above | N/A |
| A.1.2 | Conditioning of samples; temperature (°C) : | EL 2132-03 | As above | N/A |
| A.1.3 | Mounting of samples : | EL 2132-04 | As above | N/A |
| A.1.4 | Test flame (see IEC 60695-11-3) | EL 2132-05 | As above | N/A |
| | Flame A, B, C or D : | | As above | N/A |
| A.1.5 | Test procedure | EL 2132-06 | As above | N/A |
| A.1.6 | Compliance criteria | EL 2132-07 | As above | N/A |
| | Sample 1 burning time (s): | | As above | N/A |
| | Sample 2 burning time (s): | | As above | N/A |
| | Sample 3 burning time (s): | | As above | N/A |
| A.2 | Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4) | EL 2132-08 | Materials & components have adequate flammability classification (Refer appended table 1.5.1) | P |
| A.2.1 | Samples, material: | EL 2132-09 | As above | N/A |
| | Wall thickness (mm): | | As above | N/A |
| A.2.2 | Conditioning of samples; temperature (°C) : | EL 2132-10 | As above | N/A |
| A.2.3 | Mounting of samples : | EL 2132-11 | As above | N/A |
| A.2.4 | Test flame (see IEC 60695-11-4) | EL 2132-12 | As above | N/A |
| | Flame A, B or C : | | As above | N/A |
| A.2.5 | Test procedure | EL 2132-13 | As above | N/A |
| A.2.6 | Compliance criteria | EL 2132-14 | As above | N/A |
| | Sample 1 burning time (s): | | As above | N/A |
| | Sample 2 burning time (s): | | As above | N/A |
| | Sample 3 burning time (s): | | As above | N/A |
| A.2.7 | Alternative test acc. to IEC 60695-11-5, cl. 5 and 9 | EL 2132-15 | As above | N/A |
| | Sample 1 burning time (s): | | As above | N/A |

Tests relating to Fire Safety EL 2132 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| | Sample 2 burning time (s): | | As above | N/A |
| | Sample 3 burning time (s): | | As above | N/A |
| A.3 | Hot flaming oil test (see 4.6.2) | EL 2132-16 | As above | N/A |
| A.3.1 | Mounting of samples | EL 2132-17 | As above | N/A |
| A.3.2 | Test procedure | EL 2132-18 | As above | N/A |
| A.3.3 | Compliance criterion | EL 2132-19 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 00
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 20
Total No of applicable Tests = 02
No. of tests for which the sample passed= 02

Certificate: It is certified that the above tests were performed and found to be passing/~~failing~~ in the requirement tested. N/

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(Approving Authority)

Tests relating to Insulating Properties

EL 2133 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| B | ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS(see 4.7.2.2 and 5.3.2) | EL 2133-00 | Motor not used | N/A |
| B.1 | General requirements | EL 2133-01 | As above | N/A |
| | Position : | | As above | N/A |
| | Manufacturer : | | As above | N/A |
| | Type : | | As above | N/A |
| | Rated values : | | As above | N/A |
| B.2 | Test conditions | EL 2133-02 | As above | N/A |
| B.3 | Maximum temperatures | EL 2133-03 | As above | N/A |
| B.4 | Running overload test | EL 2133-04 | As above | N/A |
| B.5 | Locked-rotor overload test | EL 2133-05 | As above | N/A |
| | Test duration (days): | | As above | N/A |
| | Electric strength test: test voltage (V) : | | As above | N/A |
| B.6 | Running overload test for d.c. motors in secondary circuits | EL 2133-06 | As above | N/A |
| B.6.1 | General | EL 2133-07 | As above | N/A |
| B.6.2 | Test procedure | EL 2133-08 | As above | N/A |
| B.6.3 | Alternative test procedure | EL 2133-09 | As above | N/A |
| B.6.4 | Electric strength test; test voltage (V): | EL 2133-10 | As above | N/A |
| B.7 | Locked-rotor overload test for d.c. motors in secondary circuits | EL 2133-11 | As above | N/A |
| B.7.1 | General | EL 2133-12 | As above | N/A |
| B.7.2 | Test procedure | EL 2133-13 | As above | N/A |
| B.7.3 | Alternative test procedure | EL 2133-14 | As above | N/A |
| B.7.4 | Electric strength test; test voltage (V) : | EL 2133-15 | As above | N/A |
| B.8 | Test for motors with capacitors | EL 2133-16 | As above | N/A |
| B.9 | Test for three-phase motors | EL 2133-17 | As above | N/A |
| B.10 | Test for series motors | EL 2133-18 | As above | N/A |
| | Operating voltage (V) : | | As above | N/A |

*- Total number of Requirements to be observed / inspected = 00
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 19
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested. (These tests are not applicable).

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(Approving Authority)

Tests relating to Electrical Safety — EL 2134 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| C | ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)* | EL 2134-00 | No such transformer used | N/A |
| | Position : | | As above | N/A |
| | Manufacturer : | | As above | N/A |
| | Type : | | As above | N/A |
| | Rated values : | | As above | N/A |
| | Method of protection: | | As above | N/A |
| C.1 | Overload test | EL 2134-01 | As above | N/A |
| C.2 | Insulation | EL 2134-02 | As above | N/A |
| | Protection from displacement of windings: | | As above | N/A |

*- Total number of Requirements to be observed / inspected = 01
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 02
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested.(These tests are not applicable).

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(Approving Authority)

Tests relating to Insulating Properties — EL 2135 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| D | ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4) | EL 2135-00 | Class III Appliance | N/A |
| D.1 | Measuring instrument | EL 2135-01 | As above | N/A |
| D.2 | Alternative measuring instrument | EL 2135-02 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 00
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 03
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested. (These tests are not applicable).

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(Approving Authority)

Tests relating to Thermal Properties — EL 2136– V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| E | ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13) | EL2136-00 | Not used | N/A |

*- Total number of Requirements to be observed / inspected = 00
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 01
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested. (This test is not applicable).

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(Approving Authority)

Tests relating to Electrical Safety EL 2137 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| F | ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G) | EL2137-00 | Class III Appliance | N/A |

*- Total number of Requirements to be observed / inspected = 00
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 01
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested.(This test is not applicable).

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(Approving Authority)

Tests relating to Electrical safety — EL 2138 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| G | ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES | EL 2138-00 | No such method used | N/A |
| G.1 | Clearances | EL 2138-01 | As above | N/A |
| G.1.1 | General | EL 2138-02 | As above | N/A |
| G.1.2 | Summary of the procedure for determining minimum clearances | EL 2138-03 | As above | N/A |
| G.2 | Determination of mains transient voltage (V) | EL 2138-04 | As above | N/A |
| G.2.1 | AC Mains supply | EL 2138-05 | As above | N/A |
| G.2.2 | Earthed d.c. mains supplies | EL 2138-06 | As above | N/A |
| G.2.3 | Unearthed d.c. mains supplies | EL 2138-07 | As above | N/A |
| G.2.4 | Battery operation | EL 2138-08 | As above | N/A |
| G.3 | Determination of telecommunication network transient voltage (V) | EL 2138-09 | As above | N/A |
| G.4 | Determination of required withstand voltage (V) | EL 2138-10 | As above | N/A |
| G.4.1 | Mains transients and internal repetitive peaks | EL 2138-11 | As above | N/A |
| G.4.2 | Transients from telecommunication networks: | EL 2138-12 | As above | N/A |
| G.4.3 | Combination of transients | EL 2138-13 | As above | N/A |
| G.4.4 | Transients from cable distribution systems | EL 2138-14 | As above | N/A |
| G.5 | Measurement of transient voltages (V) | EL 2138-15 | As above | N/A |
| | a) Transients from a mains supply | | As above | N/A |
| | For an a.c. mains supply | | As above | N/A |
| | For a d.c. mains supply | | As above | N/A |
| | b) Transients from a telecommunication network | | As above | N/A |
| G.6 | Determination of minimum clearances | EL 2138-16 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 00
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 17
Total No of applicable Tests = 00
No. of tests for which the sample passed = 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested.
(These tests are not applicable).

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(Approving Authority)

Tests relating to Radiation Safety EL 2139 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| H | ANNEX H, IONIZING RADIATION (see 4.3.13) | EL 2139-00 | No Ionizing radiation | N/A |

*- Total number of Requirements to be observed / inspected = 00
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 01
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested.(This test is not applicable).

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(Approving Authority)

Tests relating to Electrical Safety EL 2140 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| J | ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)* | EL 2140-00 | Class III Appliance | N/A |
| | Metal(s) used : | | As above | N/A |

*- Total number of Requirements to be observed / inspected = 01
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 00
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested. (These tests are not applicable).

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(Approving Authority)

Tests relating to General Requirement — EL 2141 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| K | ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)* | EL 2141-00 | Thermal control not used | N/A |
| K.1 | Making and breaking capacity | EL 2141-01 | As above | N/A |
| K.2 | Thermostat reliability; operating voltage (V) : | EL 2141-02 | As above | N/A |
| K.3 | Thermostat endurance test; operating voltage (V) : | EL 2141-03 | As above | N/A |
| K.4 | Temperature limiter endurance; operating voltage (V) : | EL 2141-04 | As above | N/A |
| K.5 | Thermal cut-out reliability | EL 2141-05 | As above | N/A |
| K.6 | Stability of operation | EL 2141-06 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 01
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 06
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested. (These tests are not applicable).

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(Approving Authority)

Tests relating to General Requirement EL 2142 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| L | ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)* | EL 2142-00 | In compliance | P |
| L.1 | Typewriters* | EL 2142-01 | Refer L.7 | N/A |
| L.2 | Adding machines and cash registers* | EL 2142-02 | As above | N/A |
| L.3 | Erasers* | EL 2142-03 | As above | N/A |
| L.4 | Pencil sharpeners* | EL 2142-04 | As above | N/A |
| L.5 | Duplicators and copy machines* | EL 2142-05 | As above | N/A |
| L.6 | Motor-operated files* | EL 2142-06 | As above | N/A |
| L.7 | Other business equipment* | EL 2142-07 | Network camera (CCTV Camera) | P |

*- Total number of Requirements to be observed / inspected = 08
Total No of applicable Requirement = 02
No of Requirements for which the sample passed = 02

Total number of tests to be conducted = 00
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be passing/~~failing~~ in the requirement tested.

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(Approving Authority)

Tests relating to Electrical Safety — EL 2143 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| M | ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1) | EL 2143-00 | No telephone ringing signals used | N/A |
| M.1 | Introduction* | EL 2143-01 | As above | N/A |
| M.2 | Method A | EL 2143-02 | As above | N/A |
| M.3 | Method B | EL 2143-03 | As above | N/A |
| M.3.1 | Ringing signal | EL 2143-04 | As above | N/A |
| M.3.1.1 | Frequency (Hz): | EL 2143-05 | As above | N/A |
| M.3.1.2 | Voltage (V) : | EL 2143-06 | As above | N/A |
| M.3.1.3 | Cadence; time (s), voltage (V) : | EL 2143-07 | As above | N/A |
| M.3.1.4 | Single fault current (mA) : | EL 2143-08 | As above | N/A |
| M.3.2 | Tripping device and monitoring voltage : | EL 2143-09 | As above | N/A |
| M.3.2.1 | Conditions for use of a tripping device or a monitoring voltage | EL 2143-10 | As above | N/A |
| M.3.2.2 | Tripping device | EL 2143-11 | As above | N/A |
| M.3.2.3 | Monitoring voltage (V): | EL 2143-12 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 01
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 12
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested. (These tests are not applicable).

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(Approving Authority)

Tests relating to Electrical safety — EL 2144 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| N | ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5) | EL 2144-00 | No such construction used | N/A |
| N.1 | ITU-T impulse test generators | EL 2144-01 | As above | N/A |
| N.2 | IEC 60065 impulse test generator | EL 2144-02 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 00
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 03
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested. (These tests are not applicable).

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(Approving Authority)

Tests relating to General Requirements EL 2145– V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| P | ANNEX P, NORMATIVE REFERENCES | EL 2145-00 | In compliance | P |

*- Total number of Requirements to be observed / inspected = 00
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 01
Total No of applicable Tests = 01
No. of tests for which the sample passed= 01

Certificate: It is certified that the above tests were performed and found to be passing/~~failing~~ in the requirement tested.

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(Approving Authority)

Tests relating to General Requirements

EL 2146 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| Q | ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1) | EL 2146-00 | No VDR used | N/A |
| | A VDR shall comply with iec 61051-2, whether a fire enclosure is provided or not, taking into account all of the following: | | As above | N/A |
| | a) Preferred climatic categories<br>Lower category temperature:<br>-10°C<br>Upper category temperature:<br>+85°C<br>Duration of damp Test, steady state test:21 days | | As above | N/A |
| | b) Maximum continuous voltage:<br>Atleast 1,25 times the rated voltage of the equipment or<br>Atleast 1,25 times the upper voltage of the rated voltage range | | As above | N/A |
| | c) Combination pulse : | EL 2146-01 | As above | N/A |
| | d) Body of the VDR shall comply with Needle flame test according to IEC 60695-11-5 with the following test severities:<br>duration of application of the test flame: 10 s<br>after flame time: 5s<br>[This test is not required if VDR complies with V-1 CLASS MATERIAL] | EL 2146-02 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 00
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 03
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested. (These tests are not applicable).

.....
(Approving Authority)

Tested By



Issued By:

Tests relating to General Requirement — EL 2147– V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| R | ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES* | EL 2147-00 | See below | N/A |
| R.1 | Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)* | EL 2147-01 | Uncoated printed board used | N/A |
| R.2 | Reduced clearances (see 2.10.3)* | EL 2147-02 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 03
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 00
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested. (These tests are not applicable).

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(Approving Authority)

Tests relating to General Requirement EL 2148 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| S | ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)* | EL 2148-00 | No such construction | N/A |
| S.1 | Test equipment* | EL 2148-01 | As above | N/A |
| S.2 | Test procedure* | EL 2148-02 | As above | N/A |
| S.3 | Examples of waveforms during impulse testing* | EL 2148-03 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 04
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 00
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested.
(These tests are not applicable).

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(Approving Authority)

Tests relating to Protection against Ingress of water **EL 2149 – V1.4**

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| T | ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)* | EL 2149-00 | In compliance with SGS Test report no: HCD0716/2018. | P |

*- Total number of Requirements to be observed / inspected = 01
Total No of applicable Requirement = 01
No of Requirements for which the sample passed = 01

Total number of tests to be conducted = 00
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be passing/~~failing~~ in the requirement tested.

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(Approving Authority)

Tests relating to Wiring EL 2150 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| U | ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4) | EL2150-00 | Class III appliance operate on SELV supply | N/A |
| U.1 | GENERAL | EL2150-01 | As above | N/A |
| U.2 | TYPE TESTS | EL2150-02 | As above | N/A |
| U.2.1 | GENERAL | EL2150-03 | As above | N/A |
| U.2.2 | ELECTRIC STRENGTH | EL2150-04 | As above | N/A |
| U.2.2.1 | SOLID ROUND WINDING WIRE AND STRANDED WINDING WIRES | EL2150-05 | As above | N/A |
| U.2.2.1.1 | WIRES WITH NOMINAL CONDUCTOR DIAMETER UPTO AND INCLUDING 0.100MM | EL2150-06 | As above | N/A |
| U.2.2.1.2 | WIRES WITH NOMINAL CONDUCTOR DIAMETER OVER 0.100MM AND INCLUDING 2.500MM | EL2150-07 | As above | N/A |
| U.2.2.1.3 | WIRES WITH NOMINAL CONDUCTOR DIAMETER OVER 2.500MM | EL2150-08 | As above | N/A |
| U.2.2.2 | SQUARE OR RECTANGULAR WIRES | EL2150-09 | As above | N/A |
| U.2.3 | FLEXIBILITY AND ADHERENCE | EL2150-10 | As above | N/A |
| U.2.4 | HEAT SHOCK | EL2150-11 | As above | N/A |
| U.2.5 | RETENTION OF ELECTRIC STRENGTH AFTER BENDING | EL2150-12 | As above | N/A |
| U.3 | TESTING DURING MANUFACTURING | EL2150-13 | As above | N/A |
| U.3.1 | GENERAL | EL2150-14 | As above | N/A |
| U.3.2 | ROUTINE TESTS | EL2150-15 | As above | N/A |
| U.3.3 | SAMPLING TEST | EL2150-16 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 00
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 17
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested. (These tests are not applicable).

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(Approving Authority)

Tested By



Issued By:

Tests relating to Electrical Safety — EL 2151 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| V | ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1) * | EL 2151-00 | Class III Appliance | N/A |
| V.1 | Introduction* | EL 2151-01 | As above | N/A |
| V.2 | TN power distribution systems | EL 2151-02 | As above | N/A |
| V.3 | TT Power Distribution systems | EL 2151-03 | As above | N/A |
| V.4 | IT Power Distribution systems | EL 2151-04 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 02
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 03
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested. (These tests are not applicable).

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(Approving Authority)

Tests relating to Electrical Safety EL 2152 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| W | ANNEX W, SUMMATION OF TOUCH CURRENTS * | EL 2152-00 | Class III Appliance | N/A |
| W.1 | Touch current from electronic circuits* | EL 2152-01 | As above | N/A |
| W.1.1 | Floating circuits* | EL 2152-02 | As above | N/A |
| W.1.2 | Earthed circuits* | EL 2152-03 | As above | N/A |
| W.2 | Interconnection of several equipments* | EL 2152-04 | As above | N/A |
| W.2.1 | Isolation* | EL 2152-05 | As above | N/A |
| W.2.2 | Common return, isolated from earth* | EL 2152-06 | As above | N/A |
| W.2.3 | Common return, connected to protective earth* | EL 2152-07 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 08
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 00
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested. (These tests are not applicable).

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(Approving Authority)

Tests relating to Electrical Safety — EL 2153– V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| X | ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)* | EL 2153-00 | Class III Appliance | N/A |
| X.1 | Determination of maximum input current* | EL 2153-01 | As above | N/A |
| X.2 | Overload test procedure* | EL 2153-02 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 03
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 00
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested. (These tests are not applicable).

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(Approving Authority)

Tests relating to Radiation Safety

EL 2154– V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| Y | ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3) | EL 2154-00 | Ultraviolet (UV) radiation not produced | N/A |
| Y.1 | Test apparatus : | EL 2154-01 | As above | N/A |
| Y.2 | Mounting of test samples : | EL 2154-02 | As above | N/A |
| Y.3 | Carbon-arc light-exposure apparatus : | EL 2154-03 | As above | N/A |
| Y.4 | Xenon-arc light exposure apparatus : | EL 2154-04 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 00
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 05
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested.
(These tests are not applicable).

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(Approving Authority)

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Tests relating to Electrical Safety

EL 2155– V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| Z | ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)* | EL 2155-00 | Class III Appliance | N/A |

*- Total number of Requirements to be observed / inspected = 01
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 00
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested. (These tests are not applicable).

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(Approving Authority)

Tests relating to Mechanical Properties

EL 2156 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| AA | ANNEX AA, MANDREL TEST (see 2.10.5.8) | EL 2156-00 | No such construction used | N/A |

*- Total number of Requirements to be observed / inspected = 00
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 01
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested. (This test is not applicable).

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(Approving Authority)

Tests relating to Electrical Safety — EL 2158 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| CC | Evaluation of integrated circuit (IC) current limiters* | EL 2158-00 | No such construction used | N/A |
| CC.1 | Integrated circuit (IC) current limiters* | EL 2158-01 | As above | N/A |
| CC.2 | Test program 1 | EL 2158-02 | As above | N/A |
| CC.3 | Test program 2 | EL 2158-03 | As above | N/A |
| CC.4 | Test program 3 | EL 2158-04 | As above | N/A |
| CC.5 | Compliance | EL 2158-05 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 02
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 04
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested.
(These tests are not applicable).

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(Approving Authority)

Tests relating to Mechanical Properties

EL 2159 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| DD | Requirements for the mounting means of rack-mounted equipment* | EL 2159-00 | Not a rack-mounted equipment | N/A |
| DD.1 | General | | As above | N/A |
| DD.2 | Mechanical strength test, variable N : | EL 2159-01 | As above | N/A |
| DD.3 | Mechanical strength test, 250N, including end stops: | EL 2159-02 | As above | N/A |
| DD.4 | Compliance*: | EL 2159-03 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 02
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 02
Total No of applicable Tests = 00
No. of tests for which the sample passed= 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested.
(These tests are not applicable).

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(Approving Authority)

Tests relating to Mechanical Properties — EL 2160 – V1.4

| Cl. No. | Test / Requirement name | Test Code | Test result/ observation | Verdict |
|---|---|---|---|---|
| EE | ANNEX EE, Household and home/office document/media shredders | EL 2160-00 | No such equipment | N/A |
| EE.1 | General | | As above | N/A |
| EE.2 | Markings and instructions* | EL 2160-01 | As above | N/A |
| | Use of markings or symbols*: | | As above | N/A |
| | Information of user instructions, maintenance and/or servicing instructions*: | | As above | N/A |
| EE.3 | Inadvertent reactivation test: | EL 2160-02 | As above | N/A |
| EE.4 | Disconnection of power to hazardous moving parts* | EL 2160-03 | As above | N/A |
| | Use of markings or symbols*: | | As above | N/A |
| EE.5 | Protection against hazardous moving parts | | As above | N/A |
| | Test with test finger (Figure 2A): | EL 2160-04 | As above | N/A |
| | Test with wedge probe (Figure EE1 and EE2) : | EL 2160-05 | As above | N/A |

*- Total number of Requirements to be observed / inspected = 05
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 01
Total No of applicable Tests = 00
No. of tests for which the sample passed = 00

Certificate: It is certified that the above tests were performed and found to be ~~passing/failing~~ in the requirement tested. (These tests are not applicable).

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| 1.5.1 | TABLE: List of components | | | | P |
|---|---|---|---|---|---|
| Object/part no. | Manufacturer/ trademark | Type/model | Technical data | Standard | Mark(s) of conformity |
| Plastic enclosure | SABIC INNOVATIVE PLASTICS B V | 143R | HB,130 °C | UL 94/ IEC 60695-11-10 UL 746C | UL (E45329) |
| Internal Wiring | REI HSING WIRE CO LTD | 1007 | 300Vac, 80 °C | UL 758* UL 2885* | UL (E108485) |
| PWB (input output board, sensor board) | EVERLAST WIN ELECTRONICS CO LTD | V0-7 | V-0, 130°C | UL 796,UL 94/ IEC 60695-11-10 | UL (E216522) |
| PWB (Main board) | UNIMICRON TECHNOLOGY CORP | 7MV-2 | V-0, 105°C | UL 94/ IEC 60695-11-10 UL 796, UL 746A | UL (E49068) |
| Supplementary information: The conformity certificate of critical components mentioned above has been verified by lab & found satisfactory.<br>(*): No equivalent IEC harmonized standard. | | | | | |

| 1.6.2 | TABLE: Electrical data (in normal conditions) | | | | | P |
|---|---|---|---|---|---|---|
| U (V) | I (A) | Irated (A) | P (W) | Fuse # | Ifuse (A) | Condition/status |
| 37Vdc | 0.11 | 0.17 | 4.07 | -- | -- | EUT operated at normal operating conditions |
| 57Vdc | 0.07 | 0.11 | 4.13 | -- | -- | |
| Supplementary information: | | | | | | |

| 2.1.1.5 | TABLE: Energy hazard measurement | | | | N/A |
|---|---|---|---|---|---|
| Voltage (rated) (V) | Current (rated) (A) | Voltage (max.) (V) | Current (max.) (A) | VA (max.) (VA) | |
| -- | -- | -- | -- | -- | |
| Supplementary information: Class III Appliance | | | | | |

| 2.1.1.7 | TABLE: Discharge test | | | | N/A |
|---|---|---|---|---|---|
| Condition | τ calculated (s) | τ measured (s) | t u→ 0V (s) | Comments | |
| -- | -- | -- | -- | -- | |
| Supplementary information: Class III Appliance | | | | | |

| 2.2.2 | TABLE: SELV measurement (under normal conditions) | | | N/A |
|---|---|---|---|---|
| Transformer | Location | Voltage (max.) (V) | | Voltage Limitation Component |
| | | V peak | V d.c. | |
| -- | -- | -- | -- | -- |
| Supplementary information: Class III Appliance | | | | |

| 2.2.3 | TABLE: SELV measurement (under fault conditions) | | N/A |
|---|---|---|---|
| Location | Voltage (max.) (V) | Comments | |
| -- | -- | -- | |
| Supplementary information: Class III Appliance | | | |

| 2.4.2 | TABLE: Limited current circuit measurement | | | | | N/A |
|---|---|---|---|---|---|---|
| Location | Voltage (V) | Current (mA) | Freq. (kHz) | Limit (mA) | Comments | |
| -- | -- | -- | -- | -- | -- | |
| Supplementary information: Class III Appliance | | | | | | |

| 2.5 | TABLE: Limited power source measurement | | N/A |
|---|---|---|---|
| | Limits | Measured | Verdict |
| According to Table 2B/2C (normal condition) | | | |
| current (in A) | -- | -- | -- |
| apparent power (in VA) | -- | -- | -- |
| According to Table 2B/2C (single fault condition) | | | |
| current (in A) | -- | -- | -- |
| apparent power (in VA) | -- | -- | -- |
| Supplementary information: | | | |

| 2.6.3.4 | TABLE: Resistance of earthing measurement | N/A |
|---|---|---|
| Location | Resistance measured (mΩ) | Comments |
| -- | -- | -- |
| Supplementary information: Tested current 32A. | | |

<OR>

| 2.6.3.4 | TABLE: Resistance of earthing measurement | N/A |
|---|---|---|
| Location | Voltage drop (V) | Comments |
| -- | -- | -- |
| Supplementary information: Tested current 32A. | | |

| 2.10.2 | Table: Working voltage measurement | | N/A |
|---|---|---|---|
| Location | RMS voltage (V) | Peak voltage (V) | Comments |
| -- | -- | -- | -- |
| Supplementary information: Class III Appliance | | | |

| 2.10.3 and 2.10.4 | TABLE: Clearance and creepage distance measurements | | | | | N/A |
|---|---|---|---|---|---|---|
| Clearance (cl) and creepage distance (cr) at/of/between: | U peak (V) | U r.m.s. (V) | Required cl (mm) | cl (mm) | Required cr (mm) | cr (mm) |
| Functional: | | | | | | |
| -- | -- | -- | -- | -- | -- | -- |
| Basic / supplementary: | | | | | | |
| -- | -- | -- | -- | -- | -- | -- |
| Reinforced: | | | | | | |
| -- | -- | -- | -- | -- | -- | -- |
| Supplementary information: Class III appliance | | | | | | |

| 2.10.5 | TABLE: Distance through insulation measurements | | | | N/A |
|---|---|---|---|---|---|
| Distance through insulation (DTI) at/of: | U peak (V) | U r.m.s. (V) | Test voltage (V) | Required DTI (mm) | DTI (mm) |
| Basic: | | | | | |
| -- | -- | -- | -- | -- | -- |
| Supplementary: | | | | | |
| -- | -- | -- | -- | -- | -- |
| Reinforced: | | | | | |
| -- | -- | -- | -- | -- | -- |
| Supplementary information: | | | | | |

| 4.3.8 | TABLE: Batteries | | | | | | | | | N/A |
|---|---|---|---|---|---|---|---|---|---|---|
| The tests of 4.3.8 are applicable only when appropriate battery data is not available | | | | - | | | | | | N/A |
| Is it possible to install the battery in a reverse polarity position? | | | | - | | | | | | N/A |
| | Non-rechargeable batteries | | | Rechargeable batteries | | | | | | |
| | Discharging | | Un-intentional charging | Charging | | Discharging | | Reversed charging | | |
| | Meas. current | Manuf. Specs. | | Meas. current | Manuf. Specs. | Meas. current | Manuf. Specs. | Meas. current | Manuf. Specs. | |
| Max. current during normal condition | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| Max. current during fault condition | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| | | | | | | | | | | |
| Test results: | | | | -- | | | | | | Verdict |
| - Chemical leaks | | | | -- | | | | | | -- |
| - Explosion of the battery | | | | -- | | | | | | -- |
| - Emission of flame or expulsion of molten metal | | | | -- | | | | | | -- |
| - Electric strength tests of equipment after completion of tests | | | | -- | | | | | | -- |
| Supplementary information: | | | | | | | | | | |

| 4.5 | TABLE: Temperature rise measurements | P |
|---|---|---|

Temperatures were measured according cl. 1.4.5. Test in condition A and B at continuous normal operation as for power input measurements of table 1.6.2 resulted in highest temperature values.
Temperatures are calculated according cl. 1.4.12.3 with regard to the maximum ambient operation temperature of 50°C ($T_{ma}$), as specified by the manufacturer.

| test voltage(s) (V): | | A: 37Vdc ~~Hz~~ | B: 57Vdc ~~Hz~~ |
|---|---|---|---|
| $t_{amb1}$ (°C): | A: 20.2 B:-- | $t_{amb2}$ (°C): | A: -- B: 20.5 |

| Temperature of part/at: (measured with thermocouples) | Measured temperature rise at $T_{amb}$ | | Calculated temperature at $T_{ma}$ | | Allowed $T_{max}$ (°C) |
|---|---|---|---|---|---|
| | A dT (K) | B dT (K) | A T (°C) | B T (°C) | |
| PWB (input output board) | 39.3 | 39.6 | 89.3 | 89.6 | 130 |
| PWB (Main board) | 42.6 | 43.1 | 92.6 | 93.1 | 105 |
| PWB (sensor board) | 36.7 | 36.9 | 86.7 | 86.9 | 130 |
| Internal wiring | 21.6 | 22.1 | 71.6 | 72.1 | 80 |
| Plastic Enclosure | 3.7 | 3.8 | 53.7 | 53.8 | 95 |
| Metallic Enclosure | 13.4 | 13.1 | 63.4 | 63.1 | 70 |

Supplementary information:

Temperatures measured with winding resistance method:

| temperature T of winding: (winding resistance method) | (V) | $R_1$ (Ω) | $R_2$ (Ω) | T (°C) | allowed $T_{max}$ (°C) | insulation class |
|---|---|---|---|---|---|---|
| -- | -- | -- | -- | -- | -- | -- |

Supplementary information:

| 4.5.5 | TABLE: Ball pressure test of thermoplastic parts | | N/A |
|---|---|---|---|
| | Allowed impression diameter (mm) .....: | ≤ 2 mm | — |

| Part | Test temperature (°C) | Impression diameter (mm) |
|---|---|---|
| -- | -- | -- |

Supplementary information: Certified material used

| 4.6.1, 4.6.2 | Table: Enclosure opening measurements | N/A |
|---|---|---|

| Location | Size (mm) | Comments |
|---|---|---|
| -- | -- | -- |

Supplementary information: No such openings

| 4.7 | Table: Resistance to fire | N/A |
|---|---|---|

| Part | Manufacturer of material | Type of material | Thickness (mm) | Flammability class | Evidence |
|---|---|---|---|---|---|
| -- | -- | -- | -- | -- | -- |

Supplementary information: Safety certified material used

| 5.1.6 | TABLE: Touch current and protective conductor current measurement | | | | | | N/A |
|---|---|---|---|---|---|---|---|
| | Test voltage (V)..... : | AC ……..V, ……Hz | | | | | — |
| Measurement location (Terminal A connected to...) | Polarity (normal) [mA] | | Polarity (reverse) [mA] | | Limit (mA) | Comments | |
| | Switch: ON | Switch: OFF | Switch: ON | Switch: OFF | | | |
| Earth terminal ("e" = open) | -- | -- | -- | -- | -- | -- | |
| Operating Panel ("e" = close) | -- | -- | -- | -- | -- | -- | |
| Supplementary information:Class III Appliance | | | | | | | |

| 5.2 | TABLE: Electric strength tests, impulse tests and voltage surge tests | | | N/A |
|---|---|---|---|---|
| Test voltage applied between: | Voltage shape (AC, DC, impulse, surge) | Test voltage (V) | Breakdown Yes / No | |
| Functional: | | | | |
| -- | -- | -- | -- | |
| Basic / supplementary: | | | | |
| -- | -- | -- | -- | |
| Reinforced: | | | | |
| -- | -- | -- | -- | |
| Supplementary information: Class III Appliance | | | | |

| 5.3 | TABLE: Fault condition tests | | | | | | P |
|---|---|---|---|---|---|---|---|
| | Ambient temperature (°C) ..... : | | | See observation | | | — |
| | Power source for EUT: Manufacturer, model/type, output rating ..... : | | | Powered by DC source | | | — |
| Component No. | Fault | Supply voltage (V) | Test time | Fuse # | Fuse current (A) | Observation | |
| IC (U31 (Pin 1,8)) | Short circuited | 57V DC | 5mins | - | - | EUT operated normally. No safety hazard occurred. Ambient temp: 20.2°C | |
| Capacitor (C52) | Short circuited | 57V DC | 5mins | - | - | EUT operated normally. No safety hazard occurred. Ambient temp: 20.3°C | |
| Supplementary information: | | | | | | | |

| C.2 | TABLE: Insulation of transformers | | N/A |
|---|---|---|---|
| | Transformer part name ..... : | -- | — |
| | Manufacturer ..... : | -- | — |
| | Type..... : | -- | — |

| Clearance (cl) and creepage distance (cr) at/of/between: | U peak (V) | U r.m.s. (V) | Required cl (mm) | cl (mm) | Required cr (mm) | cr (mm) |
|---|---|---|---|---|---|---|
| Primary /input winding and secondary/output winding (internal) | -- | -- | -- | -- | -- | -- |
| Primary/input winding and core (internal) | | | -- | -- | -- | -- |
| Secondary/output winding and core (internal) | | | -- | -- | -- | -- |
| Primary/input part and secondary/output part (external) | | | -- | -- | -- | -- |
| Primary/input part and core (external) | | | -- | -- | -- | -- |
| Primary/input part and secondary/output winding (external) | | | -- | -- | -- | -- |
| Secondary/output part and core (external) | | | -- | -- | -- | -- |
| Secondary/output part and primary/input winding (external) | | | -- | -- | -- | -- |

| | |
|---|---|
| Description of design: | |
| (a) Bobbin | |
| Primary/input pins ..... : | -- |
| Secondary/output pins ..... : | -- |
| Material (manufacturer, type, ratings) ..... : | -- |
| Thickness (mm) ..... : | -- |
| (b) General | |
| Please insert here a description of the transformer design describing: | |
| Supplementary information:Class III Appliance | |

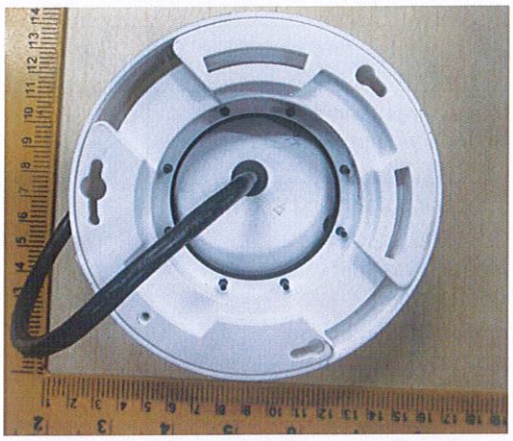
Attachment-1

Photographs:

Network Camera ( IT9389-H )

Top View

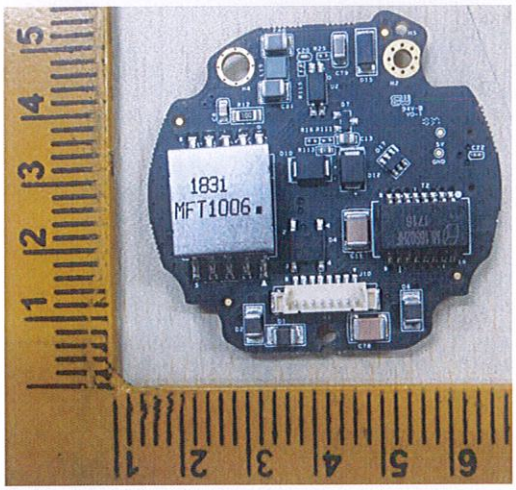
Bottom View



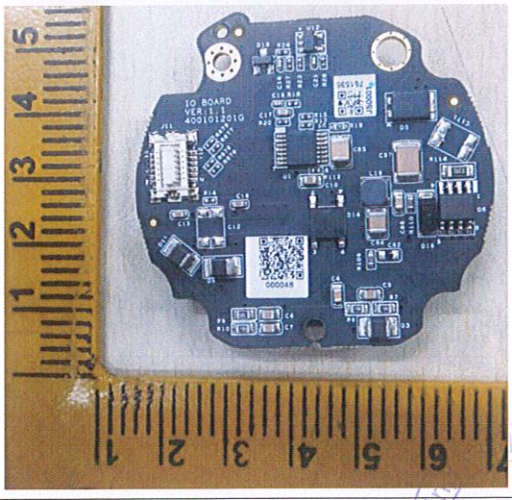
Front View

Back View

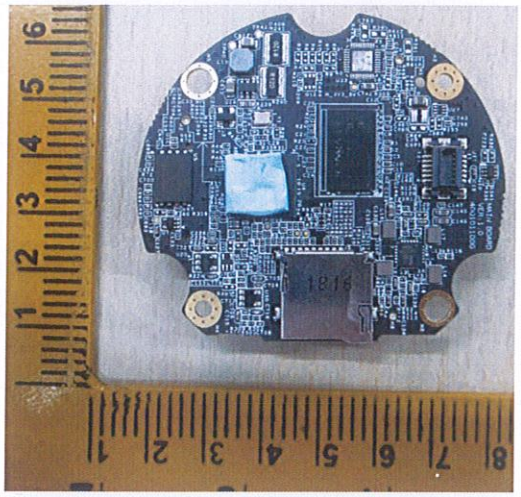
I/O Board Soldered View(Front)



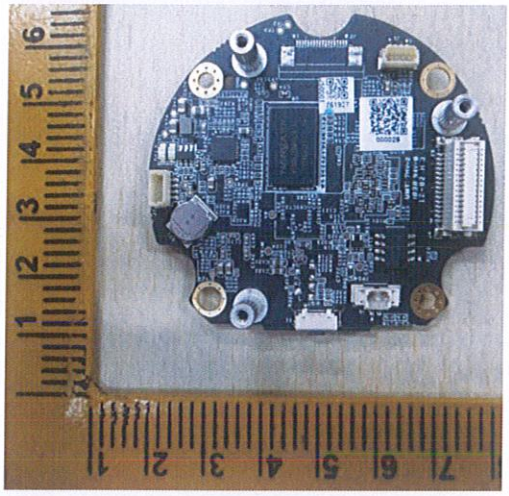

I/O Board Soldered View(Back)



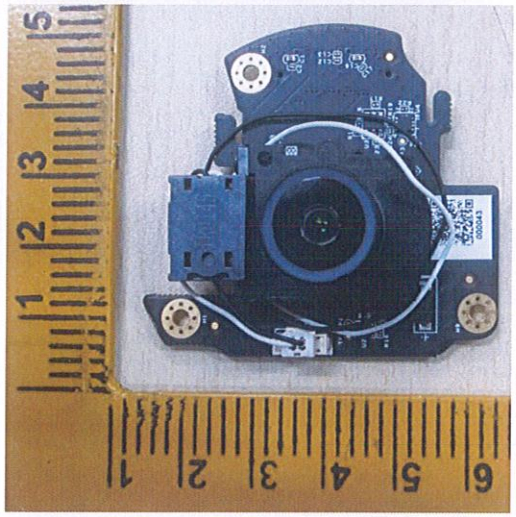
Main Board Soldered View(Front)



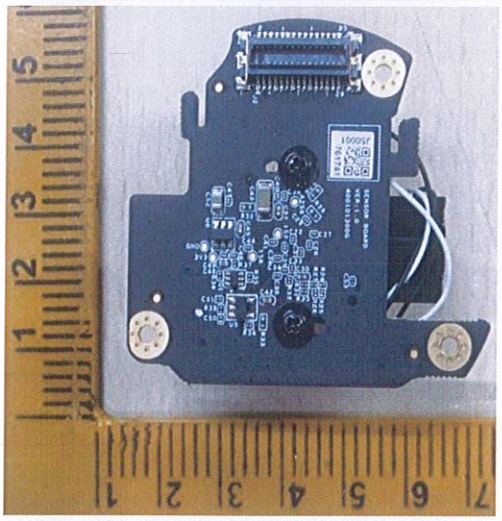
Main Board Soldered View(Back)



Sensor Board Soldered View(Front)



Sensor Board Soldered View(Back)



***End of Test Report***